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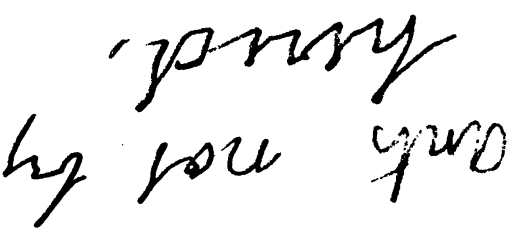

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WHAT IS MEANING?

STUDIES

IN THE

DEVELOPMENT OF SIGNIFICANCE

BY

V. WELBY

"And in that day . . . the eyes of the blind shall see out of obscurity and out of darkness."—ISAIAH xxix. 18.

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TO MY DEAR GRANDSON

RICHARD WELBY

In the hope that he may live to see what is real more worthily expressed and understood; so that, when we know better what true meaning is, the world of signs may be fuller of sense and signify more than it has ever done yet.

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PREFACE

IN attempting so great a venture as the suggestion of a new point of view from which to approach the most urgent of our present problems—among them that of education—a few words of explanation and warning are necessary.

In the first place, the appeal to more highly developed forms of expression carries with it the disability of having to write in those very idioms and to use those very figures of speech which need in some cases to be superseded, in others to be vivified, to be raised to a higher power of significance. Thus it becomes almost impossible to avoid being credited by the reader with perpetuating those old deadlocks of thought which are the very reason of half our puzzles and failures.

In the second place, the very contention that the central growth-point of the child's intellectual interest has been hitherto not merely neglected, but habitually checked and starved, implies that all of us who have gone through any ordinary form of what is called

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education are more or less suffering from the effects of this blight.

Ability of the first rank, yet more the force of exceptional genius, of course persist and triumph in spite of this or any obstacle. But even so the work for mankind of such ability or genius is hampered and minimised by the mental conditions of those whom it has to influence and to inspire. Inevitably, therefore, the question becomes how best to raise the level of average interpretative power, and with it that of average achievement.

It is necessary here to repudiate in the strongest possible way any claim on the part of the writer to the possession of special or individual power to deal with recognised difficulties by means of the method here suggested. On the contrary, the whole point of the book is that what is offered is for the use of all alike. Unless its thesis can vindicate this claim it must be worse than useless.

For what in the following pages will be called Significs is either of universal application or of none; it is a tool, an instrument, which appeals to the needs of all men everywhere and at all times. It must therefore be judged simply and solely on its own merits. Even if the person who after a careful study of many years ventures to suggest this new starting-point could be shown to have misused it, or seriously blundered in inferences from or applications of it, that would only be an additional reason for taking

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it up and working it out more adequately and efficiently. What it may best be compared with is the—happily anonymous—advent of the system of symbolic numerals and of that other symbolic system which we call the alphabet.

The number-system, which could be worked without sticks or pebbles, or even fingers, must at first have seemed to point to some peculiar gift in the few. So must the alphabet, as proposing to supersede the pictographic methods. But, as history shows, it soon became evident that here, open to all, was at once a simplification and an immense advance in the means of expression, and this discovery was promptly acted upon. For man is not prone to be content with the first crude attempts to suggest developments which economise as well as enrich his mental resources.

As this is but a preliminary sketch of the inquiry needed, no attempt is made to divide the subject into definite heads. It will, however, be seen that while its general aspects are mainly dealt with in the first part, its application to the primitive mind and thence to education comes later.

For the convenience of uninterrupted reading the longer footnotes have been relegated with other matter to the Appendix. But it must not, therefore, be supposed that these are superfluous or may be neglected. Notes and examples could be multiplied

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a hundredfold. A very large number have been collected. But it is far better for the reader to observe them for himself, since they abound on every side, and of course it has only been possible to select a few.

It now remains to acknowledge with gratitude the counsel, information, and criticism received from experts or authorities in the various subjects touched upon in these Studies. Were all such helpers to be mentioned, a volume would be needed. Moreover, part of this generous help was given before the inquiry had begun to take a definite form; and some of those who contributed most in this way—for instance Professor Henry Sidgwick, Professor Croom Robertson, Professor Tyndall, Professor Max Müller, and Mr. Romanes—are no longer with us.

But warm thanks are in the first place due to Dr. Stout for ungrudging care in looking through the MSS., and for much other invaluable help and encouragement; and in various degrees to Professor Titchener, Sir F. Pollock, Sir Leslie Stephen, Mr. Andrew Lang, Sir Alfred Lyall, Professor F. Tönnies, M. Michel Bréal, Dr. Murray, Dr. Postgate, Sir Oliver Lodge, Professor Lloyd-Morgan, Professor Ray Lankester, Professor Poulton, Dr. Waller, Dr. Shadworth Hodgson, Professor S. Alexander, Mr. Francis Galton, Professor P. Geddes, Dr. Tylor, Professor Cook Wilson, Mr. J. E. McTaggart, and

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Dr. J. Ward. Some or all of the MSS. or the proofs have also been kindly looked through by Professor Sully, Dr. Haddon, Professor Clifford Allbutt, Mr. F. C. S. Schiller, Mr. D. Hogarth, and Mr. A. Jenkinson.

V. WELBY.

DUNEAVES, HARROW, *January* 1903.

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And this must be related to the central triad of sense, meaning, and significance 163
The truth is that hitherto we have been content to go to the root of the matter and the foundation of things . . 164
But nothing springs from a root except lateral rootlets, and the very world we live on is unfounded . . . 164

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CHAPTER XXII

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It will now be well to consider at some length a view of the primitive mind already suggested elsewhere. For Significs gives us the right to postulate Man as in a true sense the expression of the world 165

What then are we to think of the beginnings of man looked at from this point of view? How can it be related to the facts of that unbroken ascent from the protozoic life-forms which is assumed by physical science? 165-166

The question is, did the early mind start from a complete break and therefore blank, and proceed to evolve a general consensus of illusion? 167

If not, how are we to account for the apparently gratuitous and destructive burden of primeval ritual? 167-168

A really primitive mind, centred upon life-preserving necessities, would, except in cases of unique urgency, react only to physiological stimuli, or would at least always demand their presence 168-170

And the primitive mind, as Dr. Tylor abundantly shows, is before all things logical and consistent with its boundaries. Then why did not early man try to dream, *e.g.* a feast for the venerated ancestor dreamt of? 170-171

The tentative becomes organised and habitual by meeting for many ages a satisfying response 171

It is often said that the odd or queer, the strange, draw attention: thus the ghost began. But one 'odd' would efface another, and no two are alike. Yet ghosts are alike—persistent, consistent, congruous; an 'odd' ghost would be suspected like any other oddity 171-172

This seems to point to animism, fetishism, shamanism, totemism, etc., as childish attempts to satisfy an originally organic demand by translation into expression through rite and word of facts generic to organic development . . . 173

We may here ask, Whence came the idea of the inwardness of mind and the outwardness of matter, and the exclusion of what we call 'the human mind' from the category of extra-planetary energies? 173

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CHAPTER XXIII

Everything we know points in the direction of underworking though obscure and little understood promptings of that

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The problems of the primitive mind must be read in the light of the pre-human activities 175-176

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The ideas (1) that 'blunder' accompanies right mental development and is corrected 'as we go'; (2) that every theory the early man forms is 'better than none at all,' and does seem usefully to connect facts; (3) that in such a theory as a 'tribal god' he is representing to himself deeply important social truths which could only thus be realised or worked out; and (4) that what we find in the primitive thought-life is everywhere a 'step,' and may well constitute, and not merely hamper, distort, or reverse a 'real progress,' only open the door to fresh exploration 177

For they suggest that what seems most grotesque was only absurd in a superficial and relative sense 178

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Not in that of mental intercommunion, which is one of the latest of thought-products 187

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suppose that the earliest man must have inherited a tendency to useful reaction from protoplasmic days, and the checking force of the physical nature which was so near to it would have prevented its forming or putting into practice any unwarranted delusion 187-188

CHAPTER XXV

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Since man is aware that his function is to interpret those 'problems' which he himself has projected (though not on his own initiative) into nature 190

The whole question of the Primitive Mind resolves itself then into one of trustworthiness. Is the modern or highly cultured mind always and in all things more trustworthy than the elementary mind? 190

It is one of the glories of the scientific mind that it is resolutely learning to forswear all sophisms and plausible ingenuities and discounting the accretions of merely conventional tradition 191

Our admitted loss of some sense-developments may point to a similar loss in delicacy of perception, and still more of sub- or pre-conscious reaction to natural stimulus . . . 191

But evidence on this point is wanting, since as yet no observations, even of the present savage's ideas or the child's, have been undertaken from this point of view 192

It is, however, admitted that language is 'kinetic' in its first discernible forms, which originally represented action, not object 192

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The voluntary element in the highest forms of intelligence, as displayed by the intensely critical activities of the modern intellect, is not always conducive to the validity of its inferences 192-193

It may even be as some thinkers have urged, that some of our highest mental activities are after all the least self-conscious 193

The Primitive Mind is dominated by its sense-scheme, the meaning-scheme being still embryonic 193

But with every advance in civilisation and reflection more and more emphasis is thrown on the latter 193

We might express the fact by saying that the primitive form of intelligence was sensitive to modes of energy which it was

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incited to translate into cult or ritual in much the same fashion as it was impelled to translate the sense of hunger into the taking of food 193-194
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What difference would a training in Significs have made to the present generation? 212-213
It would have appealed to a variety of dispositions in a variety of ways 213
Minds of each type of mind would have responded, contributing

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to raise expression to the dignity and power of an organ of prediction 213-214

The teacher of the future, himself trained thus, will make the child's Why the keynote of education, as it already is of healthy mental growth. And he will encourage innovations (or unconscious reversions to older usage) which in fact, properly applied, may have a high value . . . 214-216

The result of thus touching the nucleus of the child's interest is, as we have seen, the discovery of the principle of Translation in a new sense 216-220

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When we understand that 'Sense' is the central thing as means of (1) all experience; (2) all interpretation; (3) all knowledge; (4) all conduct; (5) all prediction; and that the forms of language are merely means of conveying this in its highest, as well as its simplest forms, we shall use all possible means for concentrating the child's interest upon it . 221-224

The method of the conjurer has never yet been used to arm the young mind against the illusions produced by ambiguity, unconscious or intentional, and by the attractive charm of the plausible 224-227

The child must therefore everywhere and always be imbued with the sense that the one thing first needful is Sense, and the idea that, having this, all things may be added unto him . 227

One advantage of the signific method is that the danger of specialism is avoided while its advantages are developed . 228

For whereas in one sense we may leave 'sense' behind as we acquire meaning and advance into the domain of pure intellect and abstract reasoning, we only need it more and more in the other sense which issues in Significance . 229

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Example of such a Lecture 230-234

CHAPTER XXXI

It would, however, be a mistake to make detailed plans of this kind at present 235

They will naturally follow the acceptance of the leading ideas of these Studies, and must be devised and carried out by experienced teachers 235

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Evolution has fostered a common sense of the Why of things . 247
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'Mind' expresses itself in early childhood in the form of the question Why? 247
The answer is the secret of knowledge and of mental and moral domination 248

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At present to ask ultimate Whys is generally decried as futile . 248

The child is in a valid sense a metaphysician. But if the instinct survives he tends to become either a word-weaver or a system-maker; if not, protesting that fact is all and theory useless, he too often carries this particular theory out in consistent blundering 248-249

But when the metaphysician becomes and is recognised as the Significian, this alternative will be antiquated . . 250

Philosophy and science will meet in a quest for Reason which is first that for Sense 250-251

For the true philosophy, like the true science, appeals to intelligence *qua* intelligence; and this appeal embraces the utmost conceivable variety and difference always on the basis, not of separation, but of distinction . . . 251

It comes not to abstract, but to interpret—not to destroy, but to fulfil; a ray of that Light whereby we learn what beauty, what goodness, what love, in short, what Life in its highest sense, may be 251

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CHAPTER I

ATTENTION has already been called in an article in *Mind* (New Series, vol. v., Nos. 17, 18)[1] to the strange fact that the very condition on which all forms of study and knowledge depend, that which is vaguely called their 'meaning,' —that very meaning which to intelligence is the cardinal quality of fact,—remains for us a virtually unstudied subject.

It may be well briefly to summarise the line then taken. It was pointed out that the conception of Meaning, its significance and its interpretation, have so far been practically ignored, and that this curious neglect leads to the loss of distinctions valuable for thought, and to a low average of interpreting power.[2] Attention was then called (1) to the absence, especially in education, of any careful study of the conditions of meaning and its interpretation, much being lost by the present dearth of means of expression and of training in their use, and (2) to the advantages which must accrue from such study. Works on philosophy and science too, and especially on logic and psychology, supply ample witness, both conscious and unconscious, to the need for a special study of meaning which might be called Significs, as

[1] It should be noted that Interpretation was here used instead of Significance, because the point of view taken was mainly psychological, and the present triad had not at the time been fully thought out.

[2] See Note I. (A), Appendix.

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no term already in use covers enough ground. It was claimed that such a study, so far from being impossible, seems indicated and called for on every side, and might be made not only practical but attractive, even to the quite young child. At present, largely from the absence of such training, language betrays a disastrous lack of power to adapt itself to the growing needs of experience. But this power would soon be acquired as the result of the training here suggested, and would even to a certain extent follow a general awakening to the importance of the question.

The idea that definition (useful enough in its own sphere) is the true remedy for defects of expression, was shown to be fallacious. Ambiguity, it was urged, is an inherent characteristic of language as of other forms of organic function. Thought may suffer from a too mechanical precision in speech. Meaning is sensitive to psychological 'climate.' But the kind of ambiguity which acts as a useful stimulant to intelligence, and enriches the field of conjecture, is very different from that which in the intellectual sphere begins and ends in confusion, or in the moral sphere begins in disingenuousness and ends in deliberate and successful imposture. We all alike, in fact, suffer and lose by these; by the endless disputation which the one entails, and the force given by the other to the specious oratory of charlatans.

The question of remedy was then dealt with. It was contended that it rests with education to initiate the needed 'fresh start.' Only those trained from the first to detect (1) the sense, (2) the meaning, and (3) the significance,—that is the tendency, the intention, and the essential interest of what is brought before their notice,—can hope to emerge from the present bondage to the plausible. It is with education as with economics; we have been told *ad nauseam* that man will not work except for food: that all

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else is mere play, and that the moment the economic pressure is removed he loafs. But that is false. Man inherits (as Professor Loeb tells us) the "instinct of work"; and if this is stunted or killed, it is a pathological condition: civilisation has made him ill. So in education. When that problem is solved, the difficulty will be ever to wean the young mind from its 'studies,' since these, as in the case of the babe, will share the fascination of play. Play, indeed, will be but the obverse of work, and the two will be interchangeable under the broader term of energy. Our language is admitted, even by foreigners, to have peculiar facilities for inquiries and studies of this kind;[1] and therefore it is incumbent upon English teachers and thinkers to lead the way. These considerations led to the conclusion that at least it would be well to realise more fully both the extent of the present anarchy, and the direction in which we may hope to advance.[2]

The article now summarised was of course written, under advice, with reference only to psychology and philosophy.[3]

[1] *E.g.* Professors Jespersen, Carl Abel, Bréal, etc. But not only these: Dr. Sweet (*A Practical Study of Languages*, 1899, p. 274) speaks of the "admitted fact that English is one of the most expressive and concise languages that have ever existed, and that ideas can be expressed in it with as much facility and accuracy as in Greek and Latin."

An American ethnologist (Mr. Powell, *Evolution of Language*, 1881, p. 15) is quoted by Professor Hanns Oertel in his *Lectures on the Study of Language* as follows: "When inflections are greatly multiplied, as they are in the (American) Indian languages alike with Greek and Latin, the speaker is compelled in the choice of his words to think of a multiplicity of things which have no connection with that which he wishes to express. . . . In the development of the English, as well as the French and German, linguistic evolution has not been in vain. Judged by these criteria the English stands alone in the highest rank."

[2] See Note I. (B), Appendix.

[3] It ought perhaps here to be mentioned, that in obedience to a request made by the English and American editors of *Mind*, a prize was offered

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But the present Studies are attempts to show, or at least to suggest, that the scope of the subject to be called Significs is, in fact, far wider than could there be claimed. There is no imaginable form of human interest and activity which it does not concern and could not raise in value. Yet it is only too plain that in education and in the practical as well as the scientific and philosophical worlds, the central importance of Expression and its interpretation are equally ignored.

I hope to make it clear that the 'sense' of any form of expression has not yet been differentiated from its 'meaning' and its 'significance'; and that this omission is of vital importance.[1] We often ask for meaning where by the nature of the case no meaning in the sense intended can be there: when we ought to ask for sense. And we often despair of meaning when we might discover not merely sense but something which includes and transforms it,—that is, significance. For example, great movements of population, great changes of political standard and aim, may not be consciously 'meant,' *i.e.* intended, by those who carry them out or even by their leaders. But they are

in 1896 for the best essay on "The causes of the present obscurity and confusion in psychological and philosophical terminology, and the directions in which we may hope for efficient practical remedy." This was won by Professor Ferdinand Tönnies, whose admirable article (translated by Mrs. Bernard Bosanquet) appeared in *Mind* of July and October 1899, and January 1900. In *Mind* of April 1901 there appeared some notes upon this article (unfortunately delayed by illness and bereavement), with an answer from Professor Tönnies. Before that (in 1897), a little book of fragments and parables on the subject, called *Grains of Sense*, had been published.

[1] Almost the only instance of this distinction which I have so far come across, occurs in an article on Tolstoy in the *Edinburgh Review* for July 1901: "the original Russian is often so involved that translators have had occasionally to choose between the meaning and the sense of a passage" (p. 58).

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significant: they imply some vast common impulse due to causes of which it may be we are as yet quite ignorant; and they impel us to search for these causes in order to direct, to utilise, or to counteract their effects. Our indifference to these questions is indeed nothing less than literally insensate; since it tends to fetter and cripple us both in that typical human energy which we call expression, and in its comprehension.[1] When we have the sense to concentrate training on sense in every sense, we shall for the first time realise what meaning is and can be; and rise to the highest sense,—that of Significance.[2] This is no mere play upon the word 'sense,' but a study of its range of meaning.[3]

There is, strictly speaking, no such thing as the Sense of a word, but only the sense in which it is used—the circumstances, state of mind, reference, 'universe of discourse' belonging to it. The Meaning of a word is the intent which it is desired to convey—the intention of the user. The Significance is always manifold, and intensifies its sense as well as its meaning, by expressing its importance, its

[1] Like Bruno, Leibnitz hoped for a science of signs, an algebra of thought, but he aimed at a system in which to reason and to calculate were identical, reason being literally ratio. On the other hand, Bruno "hoped to perfect a method for connecting universal ideas with real knowledge, while furnishing rules for discussion and directions for the exercise of thought and of speech. The pupil was to learn not only how to expound, to attack, and to defend, but to combine conceptions, to form new ideas, to conceive all which is or can be; not to think alone, but to use the thought of others" (Frith's *Life of Giordano Bruno*, 1887, p. 94). Surely we might share this last aim?

[2] Examples occur on all sides and abound daily. *E.g.* "The German press is unanimous in regarding the Anglo-Japanese Agreement as a political event of exceptional significance" (*Times*, February 13, 1902). "The far-reaching significance of the Colonial Secretary's visit to South Africa" (*Times*, November 27, 1902).

[3] See also below, p. 48, etc.

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appeal to us, its moment for us, its emotional force, its ideal value, its moral aspect, its universal or at least social range. All science, all logic, all philosophy, the whole controversy about æsthetics, about ethics, about religion, ultimately concentrate upon this: What is the sense of, What do we mean by, What is the significance of, that is, Why do we care for, Beauty, Truth, Goodness? Why do we value experience? And why do we seek for Significance, and resume the value of innumerable observed facts under formulæ of significance like gravitation or natural selection? Because we are the Expression of the world, as it were 'expressed from' it by the commanding or insistent pressure of natural stimuli not yet understood.

Man questions and an answer is waiting for him. But first he must learn to speak, really to 'express' himself and the world. To do that he must learn to *signify* and to signalise. He must discover, observe, analyse, appraise, first the sense of all that he senses through touch, hearing, sight, and to realise its interest, what it practically signifies for him; then the meaning—the intention—of action, the motive of conduct, the cause of each effect. Thus at last he will see the Significance, the ultimate bearing, the central value, the vital implication—of what? of all experience, all knowledge, all fact, and all thought.

There is just now a marked tendency to confess that Experience is a concept which imperatively needs both expansion and enrichment.[1] In a wholesome dread of illusion we have narrowed its scope too much. Experience can only be enriched through the acquirement in a broad sense of fresh symbols or fresh significance:

[1] Among other writers Ormond (*Foundations of Knowledge*, 1900) pleads both for this and for a critique of experience. See also Note II., Appendix.

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expression needs development in the same way for the same reason. Thus it follows that, as already suggested, every conceivable form of human interest is centrally touched and transformed by Significs.[1] The difficulty is not to make this plain, but to deal within any reasonable space with the evidence for it. The attempt even to show that the significant attitude is essentially predictive, would imply a mass of illustrative reference which would swamp these Studies altogether.

The materials, however, have been collected and can always speak for themselves. Meanwhile it may be suggested that physical science—at present the dominant source of discovery by interpretation—best represents the significant attitude. But when the man of science has been, as a matter of course, trained on Significant lines, his power of seeing through facts, his mastery of their relations or corresponding points, of their applications and indirect implications, and of the fittest expression of these, must inevitably be greatly increased. He will become once more the 'natural

[1] "The sign in speech and in writing thus has for man a significance unequalled by anything else. Inventions and discoveries, all the material acquisitions which the human mind has acquired control of, are based almost without exception upon the assumption of an intelligible and logically employed system of signs, which is the condition at the same time of the silent soliloquy of thought with itself, and of the intellectual intercourse of humanity generally; and the more we turn our glance from life generally to the provinces of intellectual activity, the more prominent a rôle do we observe the sign to assume: and its most important one in the sciences, particularly in the exact sciences" (*Signs and Symbols:* Professor Ernst Schroeder, "Open Court," October 27, 1892).

"In brief, a stupendous task arises before our eyes; the task of still further perfecting the sign, to which the human mind already owes so much, of freeing language of its imperfections, and, by the appropriate fashioning of the sign, of bringing the sign and the thing into perfect and law-governed correspondence (or, as Trendelenburg says, 'into an immediate connection')" (*Ibid.* Part II., November 3, 1892).

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philosopher,' but in a higher and more adequate sense of both terms.

In fact everything is and always will be 'in the line' of the Significian, since all converges upon it. Significs concerns the practical mind, *e.g.* in business or political life, more closely and inevitably than it does the speculative mind. For the thinker may go on through all his life turning over his own or others' thoughts and working them logically out. But the man of action must translate thought into deed as fast as ideas come to him; and he may ruin the cause he would serve by missing the significance of things. All signifies to him, 'matters' to him, interests him. As the word implies, 'Significs' sums up what for the 'man in the street' *signifies;* whatever does not signify, he will tell you, is nothing to him; and he well understands that the value of a sign is not that it may mean anything you like, and thus be used to confuse, bewilder, mislead, or that it means what is no concern of his, but that it means somewhat which in some sense has interest either for him or his fellows: he knows that it is his business to find out what this is. He knows also that signs of all kinds must point beyond themselves, must in that sense 'mean' something, or they would not be signs at all.

It need hardly be pointed out that the other man—the man in the study, the lecture-room, the council-chamber, the laboratory, the office—knows in a fuller sense still that whatever his work may be, it must signify somewhat and gain in significance as it rises and widens in importance. And most of all the original thinker, the greatest of human 'minds,' knows this.

The Poet is, in fact, the only man who has reached a world of enhanced expression which ought to be the common heritage. And even he confesses that

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> The flowering moments of the mind
> Drop half their petals in our speech.

When we have overtaken the Poet he will be able to give us poetry more perfect than any he can yet put into words, while philosophy must enter upon a new quest, where answer and solution are no longer hopeless. We cannot raise the level of expression without raising the level of thought and imagination. For what is Mind, after all, but the moment in which the world takes on Meaning and its expression? As Jowett expressed it, the very language which mind uses is the result of the instincts of long-forgotten generations.[1]

Again, the spell which the Poet casts upon us largely depends upon the perfect rationality of the mind which can afford as his does, and as no other yet can, to handle thought and language. From that secure base he can travel at will, and take us with him into new worlds of beauty and truth. But let his mind be really 'unhinged,' let his assumptions be merely the casual driftings of a vagrant fancy, and some lowering of power must result, even though certain kinds of beauty and force may still survive.

These suggestions then may be provisionally summed up as follows:—

The function of expression and the response to expression are as yet but little developed; and if general interest could be aroused in the question, and it came to be widely realised that increased powers of mental communication were easily within our reach — only needing attention, resolution, and consensus — this increase would become ours as surely as in the case of physical communication.

Expression both may and ought to outstrip rigid

[1] *Essay on Psychology*, Plato, vol. iv. (3rd edit. 1892).

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Definition: indeed it is probable that what is best worth expressing, best worth being interpreted, and best worth being acted upon, is often least capable of definition in the ordinary sense.[1]

As the sense for Sense becomes more acute and more discriminative, definition will, in fact, become less and less necessary, except in the historical form or within technical limits; while the power both of context and association will be more generally realised and more effectively utilised.

The question is one of much more than merely increased precision,[2] often the worst of pitfalls and the grave of a living language; much more also than a protest against ambiguity or obscurity.

It is also much more than a question of 'preciosity' or even of 'style'; though it is of vital concern to those who care for the beauty of linguistic form.

As life rises in scale and worth, it rises in Significance; and therefore the question of questions really is, What is Sense, or, What is Meaning, and what do we mean (that is, intend) to convey when we ask the

[1] But strange, indeed, is the notion that the terms in which we state or define any idea have no effect upon that idea, and that definition is independent of predicate and of character itself!

[2] In the case of scientific language, it is obvious that just because scientific knowledge is so constantly and rapidly growing, it becomes imperative that there should be increased consensus and better mutual understanding in this necessary development. Unless there is consistency and agreement in the definition of the term or phrase taken as a given starting-point for discussion, the indispensable variations in sense as knowledge grows (needing thus both wide expansions of connotation and many new terms) are themselves hampered and checked, or even baulked; and thus the whole subject is liable to become the prey of needless controversy—often wide of the mark—leading only to confusion or to a cul-de-sac. A pamphlet (*Witness of Science to Linguistic Anarchy*, 1898) aims at furnishing convenient illustrations of this.

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momentous question, 'In what sense?'—an inquiry which needs to be made much oftener and more seriously than it is now, as the answer must at least define the sense intended.

The future of Literature hangs first upon this question; for literature is that which of all written words is most significant, gives us most thought and feeling, and is the truest human message. And the question appeals equally to the philosophical and the scientific thinker, the politician and the man of business. The best hope lies in so arousing public interest in questions of expression—language in its widest sense—that the next generation should be trained from the first to put the subject in the forefront of all intellectual work as well as in that of all education.[1]

[1] Perhaps the most significant step towards the recognition of 'meaning' as a definite subject for study (and that on which all others depend) is taken by Dr. Stout in his *Manual of Psychology*, vol. i., 1898, where he speaks of "a process of fundamental importance which we may call the *acquirement of meaning*" (p. 34: italics his).

At present we might say with Lewis Carroll (*Life and Letters*, 1898, p. 331) that "one of the hardest things in the world is to convey a meaning accurately from one mind to another"; except that 'fully' or 'vitally' would fit some cases better than 'accurately.'

It may be well here to make definitely clear what was implied in the Preface: that is, my consciousness of inability always to avoid the very inconsistencies and confusions of which I complain. In this I may appeal to those writers who have shown themselves most conscious of the drawbacks of our current terminology—*e.g.* Mr. A. E. Taylor in *The Problem of Conduct*, p. 39 (footnote).

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CHAPTER II

In his *Practical Study of Languages*, Dr. Sweet emphasises the fact that "language is partly rational, partly irrational and arbitrary." He shows how strictly backward, because irrational in the pre-reasonable sense, much of our speech still is. Language, like conduct and thought, ought to be Sensal: (*a*) expressive of sense-experience; (*b*) expressive of what 'makes sense' and is ultimately 'good sense,' or is seen to be purposely 'funny.' Intentional: (expressive of a coherent, orderly, rational, logical meaning). Significant: expressive of the implicative, the indirectly indicative; or suggestive of further or larger issues.

Recognising the fact that meaning is first of all intention, we ought to be able to say of an utterance or an action that it is sensal, or intentional, or significant, or all three. The word 'sensal' is here used in preference to 'sensible' because in ordinary usage when a man does a sensible thing or takes a sensible view or course, the idea of intention is always present. None of the other current derivatives of sense, such as sensuous, sensual, sensitive, etc., would meet the case. This, therefore, is another reason for adopting the term 'sensal,'[1] which would ensure the required neutrality.

Many of our present modes of expression resemble the

[1] This, as well as 'significs,' has now been included in the *Dict. of Philosophy, etc.*, edited by Professor J. M. Baldwin, 1901.

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surviving coat-tail buttons, having now neither sense nor meaning. Yet they are indicative and thus significant of a dead fashion.

But there is another aspect of the question which seems generally ignored. Although in a true sense the Sensal may be said to be pre-rational, and the advent of Meaning in its fullest sense marks the attainment of the rational level, still from the very beginning language has struck the note of order now so grievously lost. And this order is no mere mechanical formality, no punctilious pedantry of utterance or script; it is simply the analogue, nay more, the characteristic of sanity. The present state of things is in this sense also largely senseless—not even sensible; still more is it unmeaning. And most of all, except as significant of a dangerous drifting among rocks of confusion, is it in-significant. For in truth when we say that the normal ascension of thought, therefore of expression, is from the less to the more rational, we are convicting language, as it is now, of descent from the more to the less rational, and thus practically of actual insanity. We find *e.g.*, such falsifying expressions as 'learning by heart' and 'coinage' of words (the association being sometimes, without notice, contradicted on the next page) even in works on Philology or Linguistics. Such a state of chaos cannot but tell disastrously on clearness of thought.[1]

And more. So far from making for pedantry and priggishness, the return of language from aberration to soundness of mind would strike a fatal blow at the prim and the pompous. Even as we are, it is just the instinct of the orderly, the reasonable, the rational, which makes possible the sense of humour and fun. At present too

[1] Dr. Sweet's remarks on the special importance of association in a pupil's mind apply here.

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often we fail, like the lunatic and the imbecile, to see our own absurdities. Unfortunately we seldom fail to suffer by them, though we generally ascribe our troubles to the wrong causes.

Meanwhile let us be ready to examine with fair and ready mind and judgment all suggested methods for extending, economising,[1] emancipating and ordering our ways of speech and writing.[2] As Dryden said, we must

[1] "Whenever any idea is constantly recurring, the best thing which can be done for the perfection of language, and consequent advancement of knowledge, is to shorten as much as possible the sign which is used to stand for that idea. All that we have accomplished hitherto has been owing to the short and expressive language which we have used to represent numbers, and the operations which are performed upon them" (*The Study of Mathematics*, A. de Morgan, 1831, p. 55).

An amusing instance at once of the need of criterions of the permissible or desirable in language, and of the present failure to supply them, occurs at the end of a suggestive discussion of Slipshod English in the *Pilot* (March 22, 1902). One correspondent notes in another's letter the sentence, "It appears that the obnoxious 'split' (infinitive) has crept into popular use during the last quarter of a century," and remarks, "Surely the word *obnoxious*, in the sense that Mr. Dalzell intends (*i.e. noxious*), is a fresh example of slipshod writing." Again another correspondent is complained of as saying "of a certain error that it 'is being fallen into by even some very elegant writers and speakers.' But would these elegant writers use such an expression as 'is being fallen into'? Certainly nothing could be less elegant!"

[2] "If language be primarily a tool, why should we not have a right to fashion it in the same manner in which we fashion social conduct by laws, and with the same partial success? . . . The first question, in such a case, is whether it is worth while to take any action whatever, and if this be answered in the affirmative, by what canon we should judge; and for this purpose Noreen's principles appear sound and practical: first, that changes in the existing speech-material by which a distinct gain is not obtained should be discountenanced; second, that, as the chief aim of all speech is to be a means of communicating thought, that form of speech must be deemed best which is most quickly and most clearly understood by the listener, and, at the same time, most easily produced by the speaker" (*Lectures on the Study of Language*, Prof. Hanns Oertel, 1902, p. 90).

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"trade both with the living and the dead for the enrichment of our language."[1]

A suggestive lecture by Professor M'Kendrick on Experimental Phonetics[2] may serve as one illustration of such 'trading.' Language, he says, "might be recorded, not by letters or syllables, but by signs or symbols which would indicate what had to be done by the vocal and articulating organs for the production of any given sound. There might thus be a physiological method of expressing speech by a series of alphabetical symbols for sounds varying in pitch, intensity, and quality." We should thus have an analphabetic system of writing, symbolising, not sounds, but the elements of sounds. It would be "a kind of algebra for speech sounds." He then quotes Janssen as saying that "'photography is to sight what writing is to thought. If there is any difference, it is to the advantage of photography. Writing is subject to conventionalities from which photography is

[1] We may well ask with Mr. W. Cairns (*Literature*, September 8, 1900), "Why . . . do not those who are so anxious to increase the scope of the language seek to do so by the revival of good English words rather than by the introduction of corrupt terms?" 'Corrupt' is, however, a question-begging term. Some of the very words here recommended once seemed corrupt, so that Skelton himself (cited by Mr. Cairns) complains that

> Our natural tonge is rude
> And hard to be enneude
> Wyth polyshed termes lustye
> Oure language is so rustye.
> . . . . .
> I wot not where to finde
> Tearmes to serue my minde
> Gowers englyshe is olde
> And of no value is tolde.

And Du Bellay, in 1549 (*Deffence et Illustration de la langue Française*), anticipated on behalf of French the present appeal: "Notre langue n'est pas assez 'copieuse et riche'; c'est une raison, non pour la deserter mais pour travailler a l'enrichir" (quoted in René Doumic's *Histoire de la Littérature Française*). See Note III., Appendix.

[2] Reported in *Nature*, December 26, 1901.

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free; writing employs a particular language, while photography speaks the universal language.'"

Suggestions like this may well seem to us revolutionary (as once did the alphabet and later the printing-press): we have not yet faith enough in the transcendent power of mind to revolve with its own world round the sun of truth and reason. Other suggestions will seem to us reactionary: we have not yet learnt that the true advance is spiral, that is, must sweep back on itself to take up ancient things and set them in new light and on new quests in new directions. But (although through many mistakes, no doubt) we shall surely win new ways of speaking all our mind and reaching new mind thereby.[1] The cruel waste of the present day in the

[1] In an article on the effect upon Oxford of the Rhodes Will (*National Review*, May 1902), Mr. Case claims for Greek that "among many other points of superiority, its preference for concrete terms, both substantival and adjectival, teach a man to signify things as they are." At the same time he speaks of the tendency in modern languages to use abstract terms as a serious defect. But in that case, the languages which we should all agree to call barbarous become also our ideal; and we must ignore the fact that intellectual development always means greater command of the abstract. Such ideas as the lowest type of man or the highest type of animal may be supposed to have are necessarily concrete.

As to the need of beginning with Greek philosophy, that, of course, wil continue in any case: there can be no question of superseding its study. But the real principle involved is surely this. The earlier Greek thinkers did not point students to some language which had been in its supposed prime long ages before they existed, in such a way as to imply that it was useless to attempt to make of their own language something yet nobler, and capable of developing into greater force as well as beauty, and more subtle delicacy and depth of significance. No; on the contrary, they made of their own 'modern' language what Mr. Case describes the now 'ancient' Greek to have been, that is, a relatively perfect medium of expression; they refused to cower before some imagined tyranny of linguistic vulgarity, some fateful law of corruption or debasement in language; and thus it is that they are rewarded by undying life and value for their thought and its expression.

Let us then follow so excellent an example! Instead of wearing our

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language-world will give place to a 'storing-up' of all our precious means of mutual speaking; to a diligent search for ways of gaining power of expression of all and every kind. One of the first conditions of such gain would be the general recognition of the absurdity and inconsistency into which we are led by speaking of verbal questions when we really mean questions of sense—'sensal' questions.[1]

A curious instance (to take the first to hand) of the mischief thus done occurs in a correspondence between Mr. A. J. Balfour and Mr. Henry Norman with reference to the famous Spion Kop despatches (February 1902). In one letter Mr. Balfour says: "But if I was mistaken in my interpretation of your speech, I hope you will admit that there was excuse. The word 'tamper' is a dangerous one; and those who employ it approach perilously near to making themselves responsible for an accusation which, if put forward in earnest, would deserve all, and more than all, the severity with which I have endeavoured to characterise it." But in the next he says that the question raised now "seems in a fair way to resolve itself into a dispute about words." And he continues by admitting that in his opinion the use of the word 're-write' "has proved utterly misleading, and has been constantly misused for polemical purposes."

The "dispute about words" therefore, as usual, is found after all to be a dispute about their real sense in a certain context, and about the implications or imputations which

eyes in this matter at the back of our heads, let us strive at least to endow the next and all succeeding generations with this same spirit. Then shall we assuredly find that there are still treasures of expression waiting to be created in this age as they were in the 'ancient' or rather the youthful days, in which there was no tendency to despair of the current speech, no neglect of the duty of intentionally and resolutely developing it in the true direction.

[1] This distinction was brought forward in the article in *Mind* (*op. cit.*).

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they are supposed to convey. But the question was never for a moment "in a fair way to resolve itself" into a merely verbal dispute. If it had, the correspondence would have been concerned merely with technical philology or else with 'style' in its æsthetic aspect.

If we began to realise how much more might be expressed and understood than is yet attempted, we should see that both word and sentence might in many ways be given more subtle expressiveness. For instance, the various senses in which we use the word 'language' and the various gradations of sense might be indicated by some means like guiding marks at the beginning of paragraphs. In any case, to start with, every book would have, as a matter of course, a sense-scheme; and little by little general consensus would make these less necessary, while the development of the Sense-sense would gradually render mark-helps superfluous.

Dr. Sweet is here a witness of the first importance. Not only does he condemn Grammar, as it is usually taught, with unsparing severity, but, suggesting that the very alphabet does two things badly, he advocates the use of accent marks for 'stress-groups' and says, "if we added a sign for breath-taking, and two accents to indicate the rising and falling tones, we should be able to dispense entirely with the present unsatisfactory system of punctuation, etc., and to express clearly and precisely what they indicate only imperfectly and vaguely."[1] In both cases the aim is the same—greater expressiveness with increased economy.[2]

M. Michel Bréal's "Essai de Sémantique" is full of

[1] *Words, Logic, and Grammar* (1876), pp. 13, 14.

[2] Professor Oertel remarks that "no language, it appears, has thought it fit to make any consistent formal distinction of names according to the logical categories given above, distinguishing, for instance, by accent or vowel changes, quality words from action words (*Lectures*, etc., p. 284). But it is the users of language who will, it may be hoped, 'think fit' to

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instances in which one man, a group of men, a generation, effected far-reaching changes in language. But then no printer existed to terrorise the writer and the schoolmaster. It is to him—though we little realise it—that we owe the absurd rigidity and central importance now given to spelling. He practically imposes it upon us to save trouble and expense. This of course, from his point of view, is quite reasonable; and, on occasion, indeed, he cheerfully accepts the extra work of dialect-printing, etc. It is also true, of course, that it is well to preserve the traditions and the historical associations of language. Yet even academic custom is often recklessly false to these; it is to the mere fashion of the hour, or to mere dead convention, that we are abjectly submissive.

In another direction a searching reform is needed. If we were seriously to set to work to distinguish by some recognised sign, the untested from the tested and 'passed' simile, we should simply gain in comparison a new world.[1]

We should have—

1. Casual likeness, two ideas or things comparable or similar in one point, in one context, on one occasion, to one audience, etc., only.

combine for the purpose of initiating consistent and useful distinctions of this kind. When they do, language will be found quite amenable! The same writer indeed elsewhere says of the 'organic theory' that "when it began to separate speech from the speaker, when it assumed for language an independent existence and a development according to laws of its own, the theory became dangerous and turned investigations into a wrong channel" (p. 57). Why then does he use its language?

[1] Lord Acton has sounded a true note here: "'The want of an energetic understanding of the sequence and real significance of events . . . is ruin to a student of history.' Historians should learn from men of science 'how to secure fulness and soundness in induction, how to restrain and to employ with safety hypothesis and analogy'" (quoted in *Edinburgh Review*, July 1901, p. 128). See Note IV., Appendix.

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2. General likeness of the whole, with unlikeness of constituents; results analogous but differently arrived at or constructed.

3. Likeness in all but one point or feature. This may be (*a*) important (i.) to the original figurate, (ii.) to the metaphorical use; (*b*) indifferent.

4. Valid analogy ringing true in character throughout, bearing pressure to the limit of knowledge, and yet remaining analogy and never becoming equivalence, or identity in varying senses.

5. Equivalence: as when we say that so-and-so applies in both cases—(*a*) wholly; (*b*) partially. (In these cases it is often difficult to say which is metaphorical and which is literal. There is often borrowing backwards and forwards, and sometimes both are neither metaphorical nor literal and yet equally 'actual.')

6. Correspondence in each point and in mass or whole. In this case the 'figure' is a reflection as in a mirror. Or it may be a question of concomitance, of correlation, of parallel, of object and its shadow, seal and its stamp, etc.

Now, however, it may be said that we have to leave the field of analogy and enter that of homology.[1] In a criticism of Mr. Spencer's comparison of society to an organism Mr. Lester Ward urges that "the nervous system, instead of being the last to be considered in a comparison of society with an organism, is the first and only proper term of comparison. All the other terms, those upon which Mr. Spencer has laid the principal stress, furnish only 'analogies,' as he properly calls them. This, on the contrary, furnishes true *homologies*. Analogies are of little use except in arousing

[1] As in the case pointed out by Dr. J. Ward (Art. "Psychology," *Encyc. Brit.*, 10th edit.): "Between organic development and mental development there is . . . more than an analogy."

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and satisfying curiosity, but homologies are valuable aids to the sociologist. The nervous system, as the reservoir of protoplasm and seat of life, sensibility, will, and ideas, is a fundamental factor."[1] And further on he adds that "the same principles do not apply to human and animal sociology. . . . The facts of animal association therefore—the remarkable resemblances to man's ways displayed by insects and the curious imitations of human customs in various departments of the animal world—prove to be only *analogies* and not true homologies, and as such have much less value to the sociologist than they appear at first view to possess."[2] Here at least we touch upon one cause of present confusion and one hope for its cure. All manner of comparisons, from the most absurdly inapplicable to the truest and most complete, are lumped together as 'analogies'; and then we are gravely told that no argument can rest upon analogy. But some comparisons vaguely called analogies are really homologies; some again really equations; and from these an argument can of course properly start.

If we had a classification of this kind we should come with fresh light to the question of 'pressing' or working out analogy.[3] Some comparisons bear this throughout, others partially, others not at all. Then we have what may be called temporary and local analogies. Some may have borne pressure fifty years ago and cannot bear it now; some may bear it here and not there.[4] The crucial point

[1] *Outlines of Sociology*, 1898, pp. 60-61.

[2] *Ibid.*, pp. 92-93. [3] See Note V., Appendix.

[4] The first step is to make plain the immense difference between the casual and the valid comparison. As an example of the latter we may quote Charles Darwin: "There is, indeed, much analogy, as far as the states of mind is concerned, between intently scrutinising a distant object, and following out an obscure train of thought, or performing some little and troublesome mechanical work. . . . When a person is lost in thought

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must always be to see that the main thoughts and their inferences do really fit.[1]

with his mind absent, or, as it is sometimes said, 'when he is in a brown study,' he does not frown, but his eyes appear vacant" (*Expression of the Emotions*, 1872, p. 228).

After describing the phenomena of chemical 'Catalysis,' Professor Ostwald (translated in *Nature*, April 3, 1902) says, "Physiological analogies present themselves irresistibly at this point. We have here a typical *fever* phenomenon." Further on he remarks, "That it is not only a chemical interest that makes the work grateful I think I have shown you by examples of its physiological application."

[1] It is remarkable that while no one in our day seems conscious of the difference between true and false metaphor—contrasting both alike with the literal, and ascribing reality only to the latter—some at least of the classical writers set us an example in this. *E.g.* in *Demetrius on Style* (edited by W. Rhys Roberts, 1902) we are told that metaphors must be used, only they must not be far-fetched, "but natural and based on a true analogy." Some are, some are not, convertible. "Homer could call the lower slope of Ida its 'foot,' but he could never have called a man's foot his 'slope.'" A 'daring' metaphor should be converted into a simile as less risky: even Plato's employment of metaphors is dangerous. "Some things are, however, expressed with greater clearness and precision by means of metaphors than by means of the precise terms themselves: *e.g.* 'the battle shuddered.' No change of phrase could, by the employment of precise terms, give the meaning with greater truth and clearness." The writer could add then, what ought to be but is not, true now: "Usage, which is our teacher everywhere, is so particularly in regard to metaphors. Usage, in fact, clothes almost all conceptions in metaphor, and that with such a sure touch that we are hardly conscious of it." But the editor reminds us that "metaphors generally have lost much of their freshness through constant use." Yet some survive in a form which leaves us unaware of the harm they are doing.

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CHAPTER III

SIGNIFICS in fact suggests a new starting-point from which to approach the subject of analogy, and implies the emergence of a systematic and scientifically valid critique of imagery.[1] Thus it obviously makes for a new departure in philosophy as well as in psychology.

[1] An amusing witness to the need of this, and to the prevailing ignorance of the subject and waste of resources, appears in the *Times* of January 14, 1902. "There is nothing more misleading than metaphor, which has surely played far too great a part in the discussion of foreign relations. Foreign policy is a business like any other, and requires to be treated with business coolness and address." One would like to see such matters discussed without metaphor. To begin with, we must not speak of 'playing' or of 'coolness'!

A more serious and rational protest is made in the Presidential Address of Dr. Cannan in the Economic Section of the British Association of 1902.

"In regard to international relations, the first business of the teacher of economic theory is to tear to pieces and trample upon the misleading military metaphors which have been applied by sciolists to the peaceful exchange of commodities. We hear much, for example, in these days of 'England's commercial supremacy,' and of other nations 'challenging' it, and how it is our duty to 'repel the attack,' and so on. The economist asks what is 'commercial supremacy'? and there is no answer. No one knows what it means, least of all those who talk most about it. Is it selling goods dear? Is it selling them cheap? Is it selling a large quantity of goods in proportion to the area or of the country? or in proportion to its population? or absolutely, without any reference to its area or population? It seems to be a wonderful muddle of all these various and often contradictory ideas rolled into one. Yet what a pile of international jealousy and ill-feeling rests on that and equally meaningless phrases!

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It cannot be denied that thoughts must at least be handicapped by the imperious associations of language only at best adapted to the current modes of thinking. Anything which tends to prepare the hearer or reader's mind for change in the direction of greater and freer expressiveness, thus also tends to encourage, not the crank and the faddist whose fallacies are thus more easily exposed, but the thinker who is original in the best sense of the word. Thus at once we are brought face to face with the question of Expression by Figure. This necessarily rests upon the method of analogy, the only method we have for most of our mental work, involved indeed in its primary presupposition, *i.e.* the likeness between our reader's mind and our own.[1] This we have to assume though we cannot prove it,

The teacher of economic theory analyses, or attempts to analyse, these phrases, and they disappear, and with them go the jealousies suggested by them."

No wonder that the *Westminster Gazette* insists that the question (of municipal enterprise) "needs to be removed from these misleading analogies before we are at the beginning of the argument. If we could get rid of the word 'debt,' which the opponents of municipal enterprise apply to capital expenditure, and of the word 'profit,' which its advocates apply to the operations of a body like the Works Committee of a County Council, a considerable advance would be made towards clearness of discussion" (September 26, 1902).

Moreover, as Mr. A. Sidgwick (*Use of Words*, etc., 1901, pp. 168, 169) usefully reminds us, the difference between the metaphorical and the literal "is not so sharp and clear as the popular view assumes." The better view is, that "all descriptions are more or less fanciful (or theoretical)." It may be objected that these words are themselves somewhat misleading here; but it is true that "the more matter-of-fact a description appears to be, the greater *pretence* of accuracy it makes; that is precisely its danger."

[1] Here as in some other cases it is necessary to guard against being understood to mean that there can be no intelligent communication, no use of Signs, until this primary assumption has been consciously and rationally made. It is assumed in the sense here meant, whenever an animal utters a call or a cry or even adopts an attitude to which others respond or attend.

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or our writing becomes an absolute waste. No one can even controvert this statement, giving reasons for dissent, without the use of analogy.[1]

Starting then from an inevitable analogy, let us remember that just as this initial assumption is tested and established by its working and result in "making each other understand," and thus modifying each others' aims and views and action, so must every other analogy, whether in act or word, be rigorously appraised by the same test. No analogy, and therefore no metaphor or figurative form of expression, ought to be allowed to pass current in serious writing unless it has been examined and found to bear this criterion. But few seem to realise that, as Jowett says, "mere figures of speech have unconsciously influenced the minds of great thinkers."[2]

It surely follows that the crucial importance of verifying our analogies, tacit and explicit, popular and philosophical, has to be insistently brought home from the first to the mind of every child. Lord Palmerston is credited with having said that more mistakes in politics are due to false analogies than to any other cause. And this is certainly true in many other directions.

Now if we apply these ideas to the study of philosophy and religion, we shall find many answers of which, without this key to all problems, we have justly despaired; we shall approach the questions of life from a new starting-point.[3]

[1] It must, however, be admitted that what is here meant is not always what we properly mean by analogy, since this only places propositions side by side, and may force either to correspond: it is rather double Application. What is established in one context, in one universe of discourse, applies in some degree or in some sense (it may be a recondite one) to another. Our business is to find out where and how and how far. The specialisms are versions, and what is needed is reciprocal translation.

[2] *Plato*, vol. iv. p. 157.

[3] Schubert says of certain geometrical problems that it is fortunate for

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For every thinker finds in the first place, in all language open to his use, a constraining framework of imagery, implying analogies most of which he would repudiate as he would the belief in some grotesque fetish. Thus it is evident that as part of our scientific crusade we must provide a critique of Metaphors: relegating those once true and illustrative, now false and obscurative, to their proper place.[1] This is the first need if we would gain the splendid wealth which science is offering us;[2] for science is the condition of that philosophy which shall correlate and include, by interpreting to the followers of both, all other modes of thought; which shall exalt distinction to its highest point in order to enrich the ultimate unity; which can never confound distinction with separation or division. Science, in short, concentrating on Significance and on our yet unused means of reaching and translating it, of assimilating and growing by it, will make Man conscious of powers and

us that they were insoluble. "For in their ambition to conquer them it came to pass that men busied themselves more and more with geometry, and in this way kept constantly discovering new truths and developing new theories, all of which perhaps, might never have been done if the problems had been soluble and had early received their solutions. Thus is the struggle after truth often more fruitful than the actual discovery of truth. So, too, although in a slightly different sense, the apophthegm of Lessing is confirmed here, that the search for truth is to be preferred to its possession" (*Mathematical Essays and Recreations:* Hermann Schubert, 1898, p. 30).

[1] A passage in Mr. Whittaker's *Neo-Platonists*, 1901, is here suggestive: "Yet Plato's metaphorical expressions had misled even Aristotle, who seriously thought that he found presupposed in them a spatial extension of the soul." Whether in this instance the inference is right or wrong, it at least implies the importance of a right choice and use of metaphor.

[2] It would need a volume to enumerate the new facts of science waiting to be used figuratively, and thus to enlarge and enrich our conceptual treasure-house. The names given to new constituents of the atmosphere, argon, neon, etc., and Rontgen and Becquerel's discoveries of the "radio-activities of matter" are cases in point.

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of a field of experience in which to use them, which inevitably reveal this life and world as in every sense derivative, and are comparable only to the solar forces and the solar system and to that vast universe to which both belong.

For no one will now deny—science has made it impossible to deny—that the world on which we live, and of which we are in a true sense the crowning product, is no centre of the universe of stars and suns; not even the centre of one system of these. Our world is, in every possible sense, planetary.

What then, from this point of view, are the broad facts of our experience? The physiologist and psychologist alike tell us that our organism is a plexus of energies intimately related to that 'environment' which we call the material or physical world, and, moreover, that it persists or survives in virtue of a process called adjustment; whence it follows that the unfit (that which is not adjusted, cannot adapt itself to its surroundings and adapt them to itself) is eliminated. This is the adjustment which is the condition of what is usually called experience. We are fully 'in touch' (including all sense) with the world we live on, and therefore and thus we live and reproduce life. Now, as sense is the typical means of this adaptation, we may say that sense in all 'senses' of the word becomes the fitting term for that which makes the value of 'experience' in this life and on this planet.[1]

But this 'sense' in its organic form we share with sub-human and even primitive forms of life. In Man it rises, by virtue of what may be compared to the integral unity of this and other planets of the 'solar system,' into the higher form which is expressed not only in phrases like the sense of a word or a man of sense, or common-sense, but (when the word is rightly used) by meaning, that is by volitional, intentional, purposive, rationally idealised sense. Man sees

[1] See Note VI., Appendix.

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and deals with Meaning because he is a citizen of a greater Commonwealth than this secondary world, this mere planet; and realises as its 'meaning,' its relations with that which lies beyond and around it as well as within it. The whole animal 'kingdom' (if not also the plant order) shares the sense-world: the advent of the sense of meaning — the highest kind of sense—marks a new departure: it opens the distinctively human era.

Here again Science has been the revealer. She has shown us that all our 'energies' are due to the sun; that they must all be referred to what is 'beyond,' what literally 'transcends' the limits of our own world and of our means of communication and access. More than this. We cannot speak without sending a thrill through the universe; and "all rotating bodies tend to turn themselves towards the pole star."[1] And the periods of waxing and waning, characteristic of climatic (the 'essential' or 'primary') fever, "are no other than the cosmical periods of the earth itself."[2] Of course it must not be supposed that even in what we have called our planetary experience, there is no hint of 'meaning' or of purpose. There is of course in a true sense a teleology, an unconscious working for 'end' throughout the living world. And Man is from the first conscious not merely of Sense as excited response, but also of what he calls intention, governing his activities—"I mean to do, or to prevent this"—the voice of that rational action and inhibition which belongs to the highest centres of his brain.[3]

[1] Professor Perry on Tops.

[2] "Pathology," *Encyc. Brit.* (9th edit.), p. 394.

[3] The triadic form, into which ideas which belong to the category of positive, comparative, and superlative naturally and conveniently fall, easily becomes a snare. Even Wundt seems to have succumbed to its fascination (*Einleitung in die Philosophie*, 1901). Thus too much stress must not be laid upon triads which seem both to fit facts and to correspond

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This at first coincides with a crude and grotesque form of that reference to what is 'above' him which has supervened with the attainment of the erect attitude. That which began with usefully aiming stone or stick or arrow at the flying bird in the air, and translated itself into terror at the supposed black beast of prey which shot out deadly flashes and roared and growled 'over his head' out of the cloud; into fancied outlines of men or animals drawn in stars upon the sky, or into explaining the stars as little holes in his roof through which he could see the light-world; that which developed into sun worship and 'heavenly myths,' into Walhalla or Olympus or Swerga, had always the same idea as its moving force: "I belong to what is beyond the world I live upon; my world is bigger than this; that sun and moon are my lamps; all that I see in the sky concerns me." Thus astrology was born. And throughout the long ascent, the invisible region under man's feet was part of the same idea: that of reference beyond the mere surface of this earth he lived upon—even in the assumption which, as already pointed out, still survives, to the confusion of thought, as the 'foundation of the world.' Some of us are so wedded to our primitive mental 'heavens' that we resent anything that looks like dissipating into nebulous immensities the comfortable roof hung with earth-kindled lamps and populated not only by cloud-cuckoos but by all manner of (reflected) animals and men, and furnished with a convenient psychological zodiac.

To such a mind, then, the attempt to show that the most deeply ingrained usages of language may have, as Dr. Tylor

with each other. Yet it may be worth noticing that the triad "specific, generic, ordinal" found in *Outlines of Sociology* (Lester Ward, 1898), broadly answers to what is here called the planetary, the solar, and the cosmical, and thus to sense, meaning, and significance.

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says, more significance than we suppose, seems fantastic, just as its 'heavens' in fact do to the rest of us. So does the idea that our appeal to the high, the wide, the deep, the great, though merely quantitative, is also indicative of a vague instinct that there is an actual less and more within the limits of experience. But the mind that recognises three types of experience, (1) answering to 'touch,' 'smell,' and 'hearing,' and therefore practically confined to earth and its atmosphere, (2) answering to 'feeling' which transcends this (we *feel*, though we cannot touch, or hear, or see the heat of the sun), (3) answering to 'sight,' the only sense by which we respond to the sidereal universe,—such a mind will not fall into this primitive error. It will understand that the response which is here compared to 'sight' is given to a significance which may be compared with, and in another sense constitute, the value of the mental and moral as of the physical cosmos. What we may in a true sense *see* (as *e.g.* we see Sirius) may yet be beyond all other senses.

Thus we reach what is here expressed by the term significance; a conception which in recent times has become translated into that which used to be known as the mystical element, as though it were an unconscious conversion of that element into modern modes of thought. For it is again science which, having warned us of our dependence upon sense for working knowledge, seeks in the observation of fact for that 'meaning' which, as bringing us truth, is to be the 'value' of her inquiries and experiments, and the interpreter of the messages of sensation. It is science which finally impresses upon us the duty and prerogatives of that scientific imagination which can dare all because it can and does control all, and which therefore points us beyond the sense of things, beyond even the meaning of things, to their significance, their highest value for us.

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It is indisputable that we live and perceive on the three levels or in the three spheres now suggested, though only in a narrow sense.[1] No one would dispute that we touch, smell, hear, and see on the earth and in its atmosphere; that we do not touch, smell, or hear in the solar world, but that we feel and see therein; that we do not even feel though we see in the sidereal universe. As sight is the only sense which literally transcends all the limits of the other senses and carries us out into the 'infinite' universe—our eyes being indeed actually 'focussed to infinity'—we use vision by valid analogy as the main metaphor of thought. Probably it is our liability to visual illusion which has given the 'visionary' and the 'speculative' their meaning of the fanciful and the dreamful. Otherwise what we most need is of course more vision, more clear and distinct 'speculation.' Error arises from some degree of blindness, or of distorted vision, or of darkness or fog. Physical science has emphatically been an extension of the power of true seeing, which in its turn was originally an extension of 'touch.'

[1] Curiously enough, though we do speak of the meaning of a word, we never speak of a man of meaning, or of common meaning. To avoid possible confusion, the word 'intention' has been used, throughout these Studies, as the main sense of 'meaning.' But 'intent' would often, for some reasons, be preferable.

It may be desirable here to anticipate a probable objection. We may be once more told that words are quite indifferent; that every one is ready and able to consider and adopt or reject any idea, no matter what the terminology used; and that therefore the appeal to language must be futile or misleading, at least in practical life. The witness to the contrary I have found, however, to be overwhelming.

To cite one instance (taken at the moment and at random) we find the *Daily Graphic* saying in one of its pithy articles, "It will probably be found that by . . . making a concession to popular sentiment in the matter of nomenclature the introduction of the metric system will be enormously facilitated" (Jan. 22, 1903).

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CHAPTER IV

We may here consider some of our inherited and most widely used analogies; taking as example the idea of Foundation as the ultimate need (an 'unfounded' idea being false or worthless) and the corresponding idea of the earth as ultimate centre and as resting on an ultimate basis. These with all their implications, dead in science, untrue to reason, live on and sway us in the mental world, and infect the whole of psychology and philosophy: mathematics alone in the thought-world has escaped their thraldom. But this state of things is a case of pure survival; and survivals were not allowed by our intellectual forefathers, the Greek thinkers, to dominate their figurative world. Thus if we talk of the 'world' of this and that,—say the world of mind, the world of morality, the world of science,—and then suppose these 'worlds' to be firmly founded, fixed and flat, so that no change of position either of the 'world' or anything upon it and no 'antipodes' are possible, we shall be endowing our analogical 'worlds' with impossible attributes, and trying to force our ideas into impossible frameworks. It will not occur to us that if anything can rightly be compared to a world we must expect to find it revolving in what seems empty 'space,' and moving in an 'orbit' round a moving centre. We shall reject as false or fanciful that very 'world' which is necessarily unfounded and

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without basis. That is at present just our idea of a fatally unreal and deceptive world! And children grow up under the idea that whatever cannot show the equivalent of a 'solid foundation' cannot be real and true; whereas in fact the (really) 'solid' reality on which alone we can live and act, has no foundation at all. And if by 'world' we mean 'universe,' the same objection holds good.

The fact is, that many things for which we use the metaphor 'world' ought really to be expressed instead by such metaphors as 'structure' or 'edifice,' the originals of which do require foundations. Then we should recognise that they were secondary; that whatever is built up requires a world to stand on. Only, once more, such a world has itself no base. Unless some trouble had been taken to look into the matter, it would be difficult to credit the extent of the confusions started by such inherited fictions, or the number of cases in which such false premisses, used as illustrative, had led thought astray and even created puzzles. They are, in fact, responsible for an incredible amount of misleading metaphor, and probably of false popular 'metaphysics.'[1]

[1] M. Poincaré's words (*Monist*, July 1902) are here suggestive: "Every one has within him his idea of the world, which cannot so easily be put aside. For example, we have to make use of language, which is made up necessarily of preconceived ideas. Such ideas unconsciously held are the most dangerous of all.

"Shall we say that if we cause to intervene others of which we have full consciousness, we shall but aggravate the evil? I do not think so; I believe rather that they will act as mutual counterweights, I was going to say antidotes, that in general will accord poorly and even conflict with each other, forcing us to look at things from different aspects. This is enough to free us: he who can choose his master is no longer a slave."

He also warns us of the risk of unrealised assumptions, even in experiment: the most dangerous hypotheses "are in the first place and above all those that are tacit and unconscious. Since we make them without knowing it, we are powerless to abandon them." On the other hand it is

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The mischief lies in the strength of association. We apply an altogether false criterion, because of an unrealised constraint which forces thought into habitual grooves. Now, of course, so far as that is possible, it is best to do without analogy altogether. But, unfortunately, language itself has long ago decided that whether we will or no we shall use it or be content to forgo speech entirely. We cannot cancel the automatic process of translative thinking. Everything suggests or reminds us of something else. What have we just said? Mischief 'lies in' the 'strength' of something: 'constraint,' 'process,' 'translative'—every word calls up more or less consciously some physical experience transferred to the mental sphere. 'Transferred,' 'sphere'—once more we are ensnared; 'ensnared,' again a case in point, and so on.

We see all this easily enough in many cases. If we speak of a vicious circle we mean an idea which, professing to lead us onward, lands us again where we began. If we speak of a 'solid' fact we mean the analogue of something which does not give way under us, or melt or turn to vapour when touched. If we complain that we are out of our depth we really mean that we cannot find mental foothold in the analogue of water, and are thus in danger of mental suffocation. If we speak of a slippery notion we mean again something which evades or escapes our mental

often true that a theory wrongly held may in the end be so re-interpreted through fresh observation that it is taken up again under a new name or at least in a new context, and in a new perspective. He instances the fluids of Coulomb, which "reappear under the name *electrons*." Again "Carnot's theory in its primitive form, expressed, besides true relations, other inexact relations, *débris* of old ideas; but the presence of the latter did not alter the reality of the others. Clausius had but to separate them as one cuts away dead branches. The result was the second law of thermodynamics." This is also of wide application. One wonders how many theories will thus have to be reconsidered.

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grasp; while an elastic conscience stretches when it ought to be rigid. If we draw a line, or set a limit, or widen a scope, or direct an effort, or restrain an impulse, in each case the ideas of muscular and nervous activity called up suggest, correct, or clear the conception which they help to express. We describe the less by the more familiar; we express the higher by the aid of the lower. But suppose, instead, that in metaphorical usage we meant by 'circle' a spiral or straight line; that we still spoke of 'solid' fact when we meant something which in the physical sphere would give way under our feet, slip out of our hands, or disappear from our sight; that our 'depth' was depth of air, not water, so that there was no danger of choking; that by slippery we meant adhesive, and by elastic rigid; then our ideas would plainly be in hopeless confusion. We might as well use such terms as 'barrier' or 'obstacle' when we meant something which opened a way or helped us on. The wrong idea or mental image conveyed would falsify all inferences. And yet we do not see it in cases where current usage really vitiates our most central conceptions.

It must be repeated that we cannot, even if we would, dispense with metaphor, and abjure or avoid analogy. We are, indeed, actually compelled to begin with the latter; it has already been pointed out that we cannot attempt to communicate with another 'mind' without first assuming an analogy between that and our own. This being so, it seems but platitude to say that we had better test and verify our analogies, and see that those we use do not make confusion worse confounded by falsifying our mental pictures. As Dr. J. Ward warns us, "instinctive analogies have, like other analogies, to be confirmed, refuted, or modified by further knowledge, *i.e.* by the very insight

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into things which these analogies have themselves made possible."[1]

When we have substituted fancy for imagination, we round on analogy and say that it plays us false. But so we might say of logic, yes, and even of fact. Everything seems to play us false when we play it false—put it to work which it cannot do, refuse it the work it can do. And every mental function will continue to play us false, or rather to fail us in real emergency and in the greatest of our difficulties, so long as we neglect to study and master the conditions of the supreme category of significance.[2]

What then is to be our test? Simply the result. Take as a master case this very assumption with which I must needs begin if I am to try and convey some idea to another person—the assumption that his mind is like mine. What are the practical results of this assumed analogy? Simply the whole of human intercourse. If, on the other hand, the presumption of the individual mind had been that other minds were radically different from itself, no meaning would ever have been attached to the noises which issued from a throat. The 'word' would never have come into existence. And in that case, how much 'mind' would ever have been developed?

But just as a true analogy—that instinctively assumed between my mind and yours—creates the very thing which makes us human, and generates the world of human converse and society, so an inherited false one may create by its subtle but constraining influence a whole system of fallacy. Curiously enough, we do realise in a few isolated instances the tremendous power of physical analogy, though we generally act as though it mattered little whether we chose

[1] "Psychology," *Encyc. Brit.* (9th edit.).

[2] See Note VII., Appendix.

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an authentic or a mythical one. In fact we are often reminded that it is no longer legitimate to suppose that our earth could have been the only scene of a stupendous divine drama; we must give up all idea of the unique importance of our mere atom of a 'world.' So also, assuredly, in the case of all life and all 'mind,' and therefore of all our highest and worthiest ideals. But everywhere the tacit assumption reverses this. We begin by taking for granted that life and consciousness and intelligence originate on this world, except in some 'supernatural' or mystical sense at best appealing only to faith.

Here we come to the most prolific source of barren controversy. We suppose that there are only two alternatives, and that the choice of one to the exclusion of the other is always imperative. But one need not be a Hegelian in order to see that this halfness in seeing things—which I would call monocular—can never bring us the answers to our perplexities which we so sorely need.

Indeed if the unrealised sources of confusion (the use of 'confusion' itself too often among them) were eliminated, the position of every pair of controversialists on every subject would be strengthened. And thus for the first time we should see the "survival of the fittest" in a transfigured sense; the emergence of the better by the detection of the worse; the persistence of that which has shown that it can abide the most searching criticism,—the victory of the truth through which life in its worthiest sense is attained.

The secret of hopelessness in argument may perhaps be figured thus. When we take opposite directions in a closed circle, we not only find it 'vicious' but obstructive. Every moment means collision; and although we may bear down some one opponent, and rush round our circle our own way over his prostrate body, still we suffer fatally by the

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loss of one of two movements which the circle implies. We grow giddy; we have mental vertigo. For we cannot reverse our course; there is no room to turn round! Just open the circle, that is all. In exchange for a 'vicious' circle we gain a 'virtuous' spiral, that is, one by virtue of which we escape our circular prison and expand our experience. This, however, is of course more than merely a 'tangible' fact: it is strictly in the biological sense a 'visionary' one. But these are among the many metaphors which would gain by a reference to physiology. If we insist on limiting ourselves to the tangible, we are simply proclaiming ourselves as belonging to the mental stage which corresponds to the eyeless animal. If we are sometimes tempted to suppose that this is a playing on words, or the laying of undue stress on casual figures of speech, we are forgetting that while language itself is a symbolic system its method is mainly pictorial. Now a word or a group of words is often supposed to stand for a clear thought, or at least for a definite idea, when it really stands only for a feeling or an instinct. Here lies the danger. For if we use the wrong words (under the delusion that it does not matter, that it is merely a 'verbal' question), we rouse, in ourselves and others, if not the wrong thought or idea, the wrong feeling, which rises to emotion and sways conduct. But we never attribute the result to its true cause. In many cases a new impulse takes hold of words and forcibly warps the intention with which they were originally used. The new 'sense' thus started, unconsciously adopted by the orator and in the press, and either unconsciously or deliberately used by the thinker and serious writer, becomes the dominant or only one. Circumstances, again, give the word or the sentence a fresh value, and lo, we find ourselves embarked in a war, or committed

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to a policy, or swirling about (as in the case of 'education') in a sort of tide race of cross currents and whirlpools and undertow of theory; every man proclaiming as the only and infallible course the one which the whirling flood really compels him to take. All this then applies also and necessarily to the question of metaphor.[1] Most of us as yet regard the use of analogical and illustrative—even equational—writing as all on one level of brilliant or amusing fatuity. We class together an illustration or a comparison or an equational parallel by a Clerk Maxwell, a Clifford even (or now an Osborne Reynolds), and the veriest absurdity of an after-dinner orator. Many of our fashionable metaphors enshrine an analogy which is an actual 'bull.' On the other hand some indicate a deep and essential (though perhaps as yet ill understood) community of structure or function, of character or tendency. But when we begin to be masters of the world of Expression, riding the waves and steering a steady course,—learning (not without difficulty) what we want to mean, ought to mean, by realising what we do mean,—then at least we shall no longer, except in the purely technical sense, talk of merely verbal questions.

[1] See Note VIII., Appendix.

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CHAPTER V

IT is in this spirit then that we must postulate an analogy between Context and Environment: the adaptation of the word, as of the organism, to its surroundings, and conversely its effect upon these. If we enthrone one queen-word instead of another in the midst of a hive of working context-words, these will behave very differently. They will expel or kill or naturalise it.[1]

An example here may help to illustrate this suggestion. Taking both words in the generally accepted English sense, what in the last resort is the difference between Fact and Idea? What is that essential meaning of both which, if changed, will necessitate a new word to express what we are losing? Surely there can be no doubt of the answer. If we can say of any supposed fact that it is false: unreal from one point of view, untrue from another (these again never to be confounded), it ceases to be fact. No fact can be either unreal or untrue, only our idea of it. Otherwise we may as well say at once that the real may be the delusive, or the true may be the deceptive. Of course the 'real' tends to become illusory to us, and the true deceptive,

[1] The organism retains its unmistakable character as distinct from others: it is faithful to type. How far does or might the word retain character, whatever the difference of context? That is, how far does B modify A, and conversely? We must beware of pressing the organic analogies.

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owing to the inadequacy of our inferences, which is again due to our little-developed interpretative power. But this must become more adequate when we have learnt to make Sense, Meaning, and Significance our central concern, and have developed our sensifying and signifying faculties. At the very least we shall be more clearly aware of the presence of illusion, and thus of the risk of delusion and deception; and that will deprive them of their danger. Of course any given idea, false or true, as existing, is a fact. The absurdity of some ideas is also a fact. But this only witnesses to the supremacy of Fact; our very ideas must be facts before they are anything else, or acquire any kind of value. Once then verify and authenticate our analogies, our links, our ideas of relation,—once rectify our figurative scheme and make it before all loyal to fact, and thus significant in the highest and fullest sense,—and the result will be a command both of the material and the spiritual, a power to co-ordinate, inter-relate, and translate them, of which we do not yet dream. The greatest poetry and deepest thought in ancient days was born of that Cosmology which was the most advanced science, the most adequate view of Nature and Fact then possible, and naturally turned to it for inspiration. So it may well be that the poetry of the future will be born of that science of the present which (from our defect alone) seems to be antagonistic to the supremely true and real, revealed in forms of beauty.

This is the first age in which men have been found proud of being merely imitative, and content to divorce science from poetry, mechanism from art. And our very attempts to marry them, such as they are, simply issue, not in the exaltation of the first, but in the degradation of the second. But that surely will not always be so.

Once more, then, let us recognise that whether we

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will or no, all our ideas work through and by analogy. Pessimism results from the voluntary or involuntary, direct, indirect, or unconscious use of analogies which science and experience are steadily falsifying. As many of these are merely implied or involved, and nowhere definitely stated, they should be systematically searched for as an important factor in education. The great thing to remember is that in the end we have no alternative: if we take liberties with 'nature' we pay the penalty; 'nature' is the self-avenging power. The leading case is, as we have seen, the Copernican reversal. Whether he knows it or not, the typical positivist is a pre-Copernican, and is thus discredited from the outset. If we are using metaphor rightly we ought to be able to translate it back in other words, *e.g.* in Westcott's *Gospel of Life*, p. 230, 'light' and 'salt' of the earth. "Christ is welcomed as a light for revelation to the Gentiles; His disciples are pronounced by Him to be the light of the world, the salt of the earth (Matt. v. 14, 13), the power which shows finite being in its true beauty; the element which keeps that which is corruptible from decay."[1]

We use defective, misleading because plausible analogies, not only of set purpose but because, whether we will or no, the needs of language compel it. And then we never attempt to study, analyse, and classify them! Either we suppose them to be substitutes for argument or for proof, or else we declare that they are all alike casual, arbitrary, or rhetorical, and go our way satisfied with our acumen and assured of our security and our success. Hence our treatment of metaphors. We use these in such fashion as, it may be, to wreck a policy or a measure; we produce the conditions of a great famine or a great war, by the power of some vivid simile which arouses the passions of man-

[1] See Note IX., Appendix.

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kind,—and then? Are we challenged? Are we called upon to justify our action or to undergo its penalty?

No! As soon as it is seen that somehow the 'figure of speech,' apparently so harmless, sways us powerfully—even 'changes the whole situation,'—we either insist upon its replacement by another which probably, if examined, would turn out worse still; or, 'mirabile dictu,' we clamour through the newspapers for the abandonment of all metaphor; we would have the figurative outlawed, or at least excluded from public life! And, be it noted, we almost always make this demand itself through metaphor; often, indeed, in its least defensible forms.

We strangely ignore the fact that *comparison* is our one way of acquiring or imparting knowledge; that no perception has its full 'sense,' much less meaning, until we have started from its likeness to or correspondence with some other perception already ours; as we have seen, we forget that we cannot say one word to our fellow without assuming the analogy between his 'mind' and our own. And then we wonder what can be the cause of the swarming confusions which, like locusts, devour the produce of the mental land! Have we not just touched upon one such cause?

We must test metaphor by applying it experimentally in divers directions. Has colour an inside and outside? No; but colour has innumerable gradations in 'brightness,' etc.; may be 'strong' or 'weak.' The idea of inside and outside is here unmeaning, the metaphor does not help. 'Depth' in the sense of distance expresses the visual sense of the third dimension, of the eye's action in 'running back and forth' on the lines of sight.

As one out of innumerable examples of the way in which we use metaphor now, we may notice one of the falsest, *i.e.* the skeleton afterwards to be clothed with flesh (*e.g.*

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Lord Rosebery's speech at Chesterfield in December 1901).[1] Many years ago it was vainly urged by the present writer that grammar as 'skeleton' should come last in mind-development, the muscular and nervous tissues of language coming first.[2] In the same way, long before the Kindergarten was introduced, it was suggested that geography should first be taught by making a mud-map of the family 'premises,' be it only ground-plan and back garden. Then would come the flat paper map with parish, estate, county, and other boundaries representing the 'skeleton.'

It would be well also to test our imagery by diagram more systematically than we do; it would give some curious results. Though even so, unless we used a solid or hollow globe or a screw, we should still only represent plane-thinking, whereas we have to learn to think in sphere.

There are cases where the direct use of a word has lapsed because the man in the street has taken it for metaphor. For instance 'Answerable.' We are directly answerable as we are competent to receive the answer to a

[1] It is often supposed that we owe this falsity to the imagery of Ezekiel. But it must be remembered that his parable assumes that the 'very dry' bones had already formed part of living bodies; so that the process was merely a reversal of development. We, on the contrary, begin with the skeleton, as though we supposed that this was the normal order of development.

[2] It is encouraging to find this at last emphatically laid down by a competent authority. At the Headmasters' Conference (*Times*, December 23, 1901), Mr. Bell (Marlborough) said there was "first a venerable relic of the old classical system of teaching, which still survived in what was called the grammar method, by which a pupil was put through a manual of grammar as a preliminary, the reading-book being regarded mainly as a magazine of illustration of grammatical facts and principles"; and he quoted Mr. Bowen of Harrow as saying that "every year he was more convinced of the uselessness of formal grammar as a means of teaching."

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question.[1] The popular use is here, as in so many cases, a virtual blunder. A man is notable, irritable, lovable, manageable: *i.e.* he is noted, irritated, loved, managed. It is not a question of *his* noting, irritating, loving, managing. It is certainly a curious instance of unrecognised confusion that in the *Oxford Dictionary* we find the main sense 'able to be answered' marked 'rare,' while in all other similar cases it is universal. In the negative form 'unanswerable,' strangely enough, we revert to the right use. There is of course a secondary, a forensic sense of 'answerable.' A man is brought up to answer an indictment by pleading guilty or not guilty. After an accident a man in charge or authority is questioned, and if he cannot clear himself becomes liable to penalty. But this usage is akin to one in which we say that a certain machine or apparatus does not answer, and therefore is to be rejected. Do we suppose then that the mechanical is answerable, either in the sense of ability to receive or to give an answer? Ought we not

[1] The baneful power of false metaphor, inherited and habitually used, has of course been already perceived by some thinkers, though these are still too rare: *e.g.* Mr. D. G. Ritchie, in a notice of Windelband's *Präludien*, says that "the widely accepted and fatally influential figure of speech which makes the mind a mirror of the world is criticised with searching logic" (*Mind*, January 1885).

"Figurative language pervades our daily talk. We need, however, very little consideration to see that in the hands of a master the empire of metaphor must needs be constantly widening. Shakespeare employs words in figurative senses not previously used. The Shakespeare metaphors cover the wide expanse of nature; hence the incomparable value of Shakespeare as an educational lever. It would be a most useful exercise to go through the dramas, one by one, selecting examples of every principal kind of figure, then classifying them and contemplating what is signified alike in the letter and the spirit. These diligently collected and collated would constitute no trifling lesson in that grandest of the sciences, the science well designated by Bacon 'respondence'" (Grindon on "The Figurative Language of Shakespeare," read before the Clifton Shakespearian Society).

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to acquire some new word for the moral agent liable to 'answer' for his conduct? The fact is that the Answerable is in this case and in two senses the Questionable. Thus we are debarred from the best solution of the question by another senseless usage. The Unaccountable is another form of the same solecism, and is open to the same objections.

It must be remembered that Significs implies in more than one 'sense' a careful distinction between sense, meaning, and significance. This triad is found in many forms, of which perhaps one of the most striking comes from the East: "The meaning (that may belong to a word) is held to be three-fold, namely, Express, Indicated, and Suggested. The Express meaning is that conveyed to the understanding by the (word's) Denotation; the (meaning) Indicated is held to be conveyed by the (word's) Suggestion. Let these be the three powers of a word."[1]

We have already touched upon some forms of this triad, which may also be put as signification, intention, and ideal value. From this point of view, the reference of sense is mainly instinctive, of meaning volitional, and of significance moral; we have a sense of discomfort, a thing is true in a certain sense, we mean (*i.e.* intend) to do something, and we speak of some event, "the significance of which cannot be over-rated." In such a case as this last it would be impossible to substitute the 'sense' or the 'meaning' of such event for its significance, without serious loss.[2]

[1] *The Vedantasara*, edited by Colonel G. A. Jacob.

[2] The following is an instructive case of the force of sense and significance, where meaning could not be expressed:—

"Speech is, indeed, a rather over-rated medium of social intercourse. Were more eloquent words ever heard in a public assembly than those of the peer who defended Richard Steele, though he could not put two sentences together? After floundering about for some time, he exclaimed

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Significs emphasises the relation of sign in the widest sense to each of these, recognising that there is here an ascending grade of practical importance.[1] The term 'importance' itself witnesses, at all events in our language, that 'import' includes all with which we need concern ourselves. The science of Man must remain in one sense abortive unless we can master the secrets of what we vaguely call 'meaning.' We have looked for purpose; let us rather seek purport; we have sought the final end, aim, object of action or process; let us rather seek for its Sense, its Meaning, and, above all, for its Significance.

It has been rightly urged[2] that when attention is insisted on (by the 'interesting') it is more and more conceded, until it becomes in its turn an urgent demand. Thus as the playwright and actor call and play for, and thus evoke a higher dramatic standard in, the audience which powerfully reacts upon them both, so when we demand and expect in the student close attention to and keen interest in

passionately, 'I love this man so much that I would cheerfully give my life for his, and yet I cannot speak for him.' No doubt this was all that anybody remembered at the time of a once famous debate. There are emergencies in which semi-articulate feeling is more memorable than consummate oratory" ("The Right Word," *Speaker*, December 12, 1896).

[1] In this connection it is suggestive to find a leader-writer in a prominent literary periodical seriously writing thus: "By the very form of the words, by the sound of the rolling Greek line or the sonorous Latin prose, we are reminded of the fact that the essence of articulate speech lies not in its sense, its utilitarian convenience (for animals can communicate their needs and purposes to one another), but in its beauty, its power of suggesting images which are not useful but æsthetic."

In the first place, he depresses the significant and purposive to the lowest admissible level, that of mere 'utilitarian convenience,' and then contrasts it with the æsthetic alone, entirely ignoring the ethical. In the second place, however, his position might be accepted in reference to sense, though rejected in reference to meaning and emphatically protested against in the case of significance.

[2] *Renascence of the Drama*, Jones, 1895, p. 17.

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questions of 'meaning,' he, as hearer, reader, learner, will in time and in his turn stimulate his teachers.

Sense in all its senses may be called the link or nexus between the intellectual, the moral, and the æsthetic worlds. For in all senses it is the sense wherein and whereby they are possible. The double reference is the condition of this. And it must be hoped that the future teacher and examiner will see the necessity of working from this (developed into Meaning and Significance) as from a new centre outwards and a new circumference inwards. We say of two things that they are Senseless: (1) the unconscious; (2) the unmeaning. Thus we virtually identify the ascent from the first dim sensation through consciousness to intelligence, with the ascent from the sense of expression in the widest sense (beginning of course in the animal world) to the meaning of Expression (*i.e.* its intended reference) culminating in its significance; this being the highest form which sense or meaning can take. For, once more, it is true in a new sense that there is nothing in thought not already in sense; and we must not add in this extended sense of sense 'except intellect itself,' because the senseless can never be the intellectual; it can never be the reasonable, it is essentially not merely the unmeaning but the insignificant, the 'negligible'; that which is of no account.[1]

In this sense Intellect exists in sense[2] though potentially, as promise and potency; just as sense in its turn exists

[1] And it is perhaps truer than we think that to be 'out of our senses' is as much to be insane as to be 'out of our mind,' although in some cases both insanities may really mean only that while one experience has expanded, the rest remain narrow.

[2] I am purposely using the word in two of its 'senses.' Its primary sense of course is undifferentiated organic response. When we ask 'in what sense?' the era of 'specialised senses' has begun. And this applies in all uses of the word.

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(not in matter but) in Motion and Change. Here as usual we need words to describe the reality which we see in physical form as 'motion.' When we say that we are deeply moved or stirred, when we speak of energising, of quickening mind, etc., we implicitly confess that physical Motion is capable of Translation into something which we see as 'higher.' But the two modes of existence must not be confounded any more than 'existence' and 'being,' which ought to be carefully discriminated. Intellect as definable begins at the Meaning stage, and is itself transcended by Reason. We must here, however, beware of pressing the superiority of reason over intellect or 'understanding' in such wise as to assume, under the specious appeal to reason, a right to defy the natural canons of logic. Sensationalism has only to include sense in the meaning-sense in order to imply rationalism and idealism.[1] We need a word to symbolise the synthetising whole thus arrived at. Conversely, not merely rationalism but Platonism has only to include sense in its fullest sense in order to absorb sensationalism. In English usage, happily, the reasonable, far from transcending the intellectual, is allied to the sensible; while the rational in equally close alliance with it, is the indispensable condition not merely of the supreme significance of things but also of their intelligible meaning.

[1] It may be well here to remark, with reference to what has been said about Fact and Idea (on pp. 40-41) that it must be read in the light of the proposition that the idea of fact is itself the starting-point of our apprehension of the supremacy of fact. Most of us have hitherto, perhaps from lack of the habit which Significs forms, held 'fact' and 'idea' in an absolute instead of a merely expedient opposition. If fact gives us the idea of its own domination, the testimony of that idea is all the evidence we have of the existence of fact.

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CHAPTER VI

SIGNIFICANCE, then, fully resumes, in transfigured form, all that is summed up (1) in the idea of Motion, force, energy, activity, function, (2) in the idea of Sense (in all senses) and in that of Meaning (intention, purport, purpose). The concern for reality is the ultimate tie between the 'plain man,' the scientific man and the philosopher. The 'ideal' of the artist as of the poet is but purged or potential reality; the Ought in the sense of the May be, Might be, Would be, Shall be.[1] The attempt to reach an ideal order and connection by the dialectical method, as we see in certain schools of thought, easily becomes a snare. Our 'ideal' may be persuaded to conspire with us to coerce truth. The inestimable service of science is to support a natural correction of this tendency. It is the glory of the scientific army that it marches to victory over fields strewn with the fragments of dead theory, which is thus never allowed to harden permanently into obstructive dogma. Let us beware in sense, meaning, and significance of allowing the old antithesis 'matter and mind' to coerce us. Reality is monistic so far as ultimate division or separation or sunderance goes, but dualistic from one point of view and triadistic from and in another, pluralistic in and from yet another. The unity thus reached cannot yet be adequately formulated in our present terminology, which is

[1] Cf. *Problem of Conduct*, A. E. Taylor, 1902, pp. 53-54.

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cramped on every side by the outgrown shells of controversy once protective, now mere sources of danger to intellectual and moral life. For language is radically tainted by association, which, being mostly automatic, we do not realise. We cannot possibly talk the real 'twentieth century' philosophy, as we are trying to do, in the B.C. centuries dialects, or that of the twelfth century, or even the seventeenth, without at all events acquiring leading terms which shall (as in ancient days was a matter of course) bring fresh ideas, and shall rule out the stale ones and relegate them to their proper place,—at best a literary one.[1]

It is unfortunate that custom decrees the limitation of the term diagnosis to the pathological field. It would be difficult to find a better one for that power of 'knowing through,' which a training in Significs would carry. We must be brought up to take for granted that we are diagnosts, that we are to cultivate to the utmost the power to see real distinctions and to read the signs, however faint, which reveal sense and meaning.[2] Diagnostic may be called the typical process of Significs as Translation is its typical form; and the combination of these must make for the detection of lurking confusion or specious assertion in directions where the discipline of formal logic would help

[1] "At present . . . our words have only confused meanings, to which the human mind has been accustomed for so long a time that it now possesses a perfect insight into hardly anything" (*Signs and Symbols*, Schroeder, "Open Court," November 24, 1892).

[2] Here General Baden-Powell's little book on 'scouting,' applied to the mental world, would be invaluable to the trainer. He would take examples like those on pp. 67-77, and first giving out-door practice, would translate the method and use it in the detection and interpretation of meanings not obvious or 'on the surface,' and yet of vital importance for the future of the student. This would render him quick to detect self-contradiction, inconsistency, or fallacy, and lead him always to the central interest of the study. See also note X. (A), Appendix.

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less directly and simply. But this form of study, so far from superseding or displacing or even distracting attention from the disciplines already recognised, would rather render them more effectual because more vitally significant: more obviously related to ordinary experience and interests. It would also bring out the moral value of a greater respect both for the traditions and the future of language, and would, in fact, while preparing the ground for an expansion of the limits of articulate expression as yet scarcely imagined, tend to create a linguistic conscience which must beneficially react upon thought; thus bringing about gradually and naturally a spontaneous consensus in definition, which shall provide in orderly freedom for all contingencies of growing need and widening knowledge.[1]

Language is still in what we have to express by that vague and misused word, the 'instinctive' stage. We must raise it as we have ourselves risen from the 'instinctive level' to the volitional and fully rational plane, in the fullest sense. What we will it to be (and thus to give us) that it must inevitably become. The only difficulty is to 'create the demand,' to arouse the sense of lack and the determination to supply it. Yet how urgent that is already![2] It does not

[1] One of a large mass of scientific witnesses to this which have been collected (and some of which were printed in pamphlet form in 1898, "The Witness of Science to Linguistic Anarchy") may here be cited: "Objections to the use of the word neurone as a designation for the nerve unit have been offered by Kolliker, Schafer, and others. It is, however, so much more convenient a term than any other which has so far been suggested . . . that I think it must be accepted; if so, the use of the term 'neuron' as a name for the axis-cylinder process . . . is to be deprecated, and more particularly because a few distinguished teachers have been induced to continue the use of the term in this way, thus leading at times to considerable confusion" (*The Nervous System*, L. F. Barker, 1901, p. 39). A curious—and too common—example of the general helplessness.

[2] Some sociological writers feel this keenly; for instance Mr. Lester

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even need to be created, only to be directed into profitable and practicable channels. In most newspapers, even, we find frequent complaints of the present state of things. As the *Spectator* once rightly though vainly lamented (April 19, 1890), "it is the 'man in the street' who makes, and sometimes unmakes, the English language,—who, that is, adopts a new word, or modifies a grammatical form, or degrades a word from its rank by depriving it of all precision of

Ward, who says of self-consciousness (*Outlines of Sociology*, 1898), "if it could only be seized and clearly understood, self-consciousness would doubtless prove to be the primary and fundamental human attribute. Unlike reason, it has no roots in the animal stage; but neither do all men possess it. Our language seems to lack the proper word to express it in its simplest form" (p. 87). Again, of the delight of bringing true thought into the world, "it seems almost a mockery to call it a pleasure, so far above all those experiences commonly called pleasures does it rise, . . . and our language lacks the appropriate term to characterise it" (p. 107). Also "the proper designation of a true science should have the termination 'nomy' or 'onomy.' . . . As a matter of fact, the name of only one of these sciences, astronomy, has the proper termination. *Bionomy* has already been used, and *psychonomy* and *socionomy* are naturally formed, but physics and chemistry do not readily admit of a similar modification. The former might logically be divided into *baronomy* and *etheronomy*, the first embracing the gravitant forces, and the second magnetism, electricity, and all the radiant forces" (p. 139).

Mr. Ward even complains that he has to employ "terms that connote function instead of feeling, because the latter would have been difficult to find. This is due to the functional side being almost the only one ever mentioned, so that, not only are there no well-crystallised terms in which to describe the side of feeling, but even with the most careful explanation it is difficult to convey the idea" (p. 147). (The same kind of difficulty is of course found in the present attempt to reconsider traditional positions and to reinterpret experience.) And further, after insisting that "social progress is either genetic or telic" the writer says, "obviously, therefore, the sociologist at least demands a terminology that shall clearly indicate this important distinction. . . . A term is wanted to describe this major part of social evolution. So pressing is this need that I feel justified in striving to find and introduce such a term," and he ends, "in order to supply such a term I propose to revive the Greek form *telesis*, giving to it the required meaning" (p. 180).

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meaning. There is absolutely no referee upon the subject to whom people look even in theory for guidance, or who can control usage in any degree whatever. No university, no corporation of critics, no maker of dictionaries, possesses on this subject any authority, nor has any poet or author or orator any power, recognised or informal, of exercising a veto." And throughout, there has been an unconscious will at work, as M. Bréal and Prof. F. Tönnies point out, and Profs. Eucken and Jespersen show. Let there be an orderly freedom, a free order! We have but to resolve that there shall be.

It is obvious that much work is already being done in this direction. Significs claims to centralise and co-ordinate, to interpret and inter-relate, to concentrate and actualise the efforts of all true teachers to bring out the meaning of experience in every form; and in so doing to classify the various applications of the signifying property clearly and distinctly,—showing that the distinction above made between sense, meaning, and significance is not merely valid but pregnant with practical issues.

It will be admitted by all who look below the surface, that thought is unduly subservient to established modes, canons, fashions of expression. As medieval philosophy was forced to remain rigidly within orthodox lines, and thus became scholasticism, so now all thought has still to present itself in orthodox philosophical and literary form. And the wildest vagaries or most elaborate weavings of 'style' do not help us here. Indeed, they increase the difficulty. For they leave intact those very elements which are most obstructive. We are running the risk of a modern linguistic scholasticism, more fatal than the original.[1]

[1] An instructive case of the unconscious scholasticism of science is described by Dr. Divers in his opening address to the British Association

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Now orthodoxy is of course a good thing in so far as it preserves tradition and order, and makes for reverence, dignity, truth. But when, as now, it is supposed to provide us with canons and limitations of permanent value,—when throughout the prevalent systems of training, no hint is given that language is a vital instrument in the same sense that the hand is, but in immeasurably higher degree,—it must inevitably bring about the results upon thought which we see: the cutting off or nipping or starving of the buds of original power.[1] True that we may have giants of mental

at Belfast, 1902. He says, "The atomic theory of chemistry stands unsurpassed for the way in which it has fulfilled the purpose of every great theory, that of giving intellectual mastery of the phenomena of which it treats. But in the form in which it was enunciated, and still is universally expressed and accepted, it has the defect of resting upon a metaphysical basis, namely, upon the ancient hypothesis that bodies are not continuous in texture, but consist of discrete, ultra-minute particles, whose properties, if known, would account for those of the bodies themselves. Hence it has happened that, despite the light it throws upon the relations of chemical phenomena and the simple means it affords of expressing these relations, this theory has always been regarded with misgiving, and failed to achieve that explicit recognition which its abounding merit calls for. . . . Now, it is not my intention to discuss the merits or demerits of the atomic hypothesis, which can indeed no longer be treated as a merely metaphysical speculation. What I would do to-day is to impress upon you that, in spite of all that has been said and written about the atomic hypothesis in connection with chemistry, the atomic theory propounded by Dalton and adopted, implicitly at least, by all chemists, is not founded upon the metaphysical conception of material discontinuity, and is not explained or illuminated by it." He continues, "For the sake of clearness, it is convenient to restrict the term 'atomic hypothesis' to the old metaphysical view of the discontinuity of matter whilst applying the term 'atomic theory' to the current elaborated form of the Daltonian theory." We have here a good example to follow in many directions.

[1] "In the general ignorance of Logic which prevails, and which is fostered by the traditional teaching system, it is not difficult to make people accept a circular truism as a deep philosophical truth" (*Use of Words in Reasoning*, Alfred Sidgwick, 1901, p. 39). Speaking of the endless risks of error to which we are needlessly exposed, Mr.

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force who can bring wonders out of language as we have it; but these very wonders are earnest of what we might have, and have not yet; of what the mental giant of an age of Significs will have for us when he not merely finds available a far higher development of Expression, — especially in language,—than is now possible, but is also free and even expected to contribute further perfections because his hearers and readers all look for this through him.[1] If there is still so much confusion, if disputation and definition have as yet done so little for us, if the area of misunderstanding seems rather to increase than to diminish, the reason perhaps is that while 'things that mean,' things observed and words to express them accumulate with overwhelming rapidity and profusion, in other words, while questions multiply with constantly enlarging experience, the means of dealing with them remain substantially the same.[2]

Sidgwick says that "the difficulty is to see any reason, other than merely accidental,—such as the wish to save time or trouble,—for putting a limit to the process of looking behind words to the details they obscure and obliterate. Even without attempting to push the inquiry far, a little reflection shows at least that this misleading power of words has a much wider range of action than common sense is at first inclined to expect" (p. 70).

[1] As a philosophical thinker has told us (David Masson, *Recent British Philosophy*, 1877, p. 113): "There are several vital points on which no one can now think, even were he receiving five thousand a year for doing so, as he might very creditably have thought not very long ago. There have been of late, in consequence of revelations by scientific research in this direction and in that, some most notable enlargements of our views of physical nature and of history—enlargements even to the breaking down of what had formerly been a wall in the minds of most, and the substitution on that side of a sheer vista of open space."

[2] The political parallel to this is well expressed by Mr. Asquith in his letter to Mr. Scott in the *Times* (March 3, 1902). After deprecating adherence to an effete programme, he says: "And, meanwhile, the world has been moving; proportions and perspectives have shifted; new problems have advanced into the foreground; old problems have changed their position, and have to be approached by a different road. Is it not the

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We add names till the attempt to remember defeats itself, and we add meanings to words until even consistency in use and context fails to interpret them. For the reader's mind is full of deeply ingrained associations, and he will unconsciously supply 'missing links' ignored by the writer.[1]

Again, the present state of things is all in favour of the plausible. We slide over this and slur over that; we labour a secondary point and neglect a primary one. And how can it be otherwise? The man who makes an effort to show that received usages in expression vitiate our thought is simply set down, as Professor H. Sidgwick complained, as an eccentric or a purist or a pedant. And indeed there is good excuse for this view so long as such complaints are made casually and in isolated cases, or conversely imply a merely mechanical, that is a rigid, ideal of language.

Significs is a practical means of calling attention to the

duty of the Opposition to take stock of the new situation, to put on one side the unattainable and the relatively unimportant, to combine its efforts upon a few things, which are at the same time weighty, urgent, and within reach? This is what I understand by the doctrine of the 'clean slate' as set forth at Chesterfield. It is the same doctrine which I have preached to you for years past in less picturesque language; the doctrine of selection and concentration." It is surely the duty of man in dealing with language, through which alone can we hope for political or any other advance, to recognise the imperative necessity of cleaning that 'slate' which is obviously meant for temporary record, just as parchment, papyrus, or, better still, tablets of stone, etc., are meant to be permanent record.

[1] Sir Thomas Elyot (quoted in Emerson's *Brief History of the English Language*, 1900) tells us (in 1533) that he "intended to augment our English tongue, whereby men should as well express more abundantly the thing that they conceived in their hearts (wherefore language was ordained), having words apt for the purpose. . . ." And it is of course admitted that Dryden, Swift, and others, to say nothing of Dr. Johnson, set seriously to work, according to their lights, to develop and transfigure the language. The same spirit is sorely needed now, though by no means the same methods. Bishop South's well-known protest ('The Fatal Imposture and Force of Words': *Sermons*, vol. i., 1686), might be usefully repeated in our day.

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backwardness of language in comparison with other modes of communication, and to the urgent need of stimulating thought by the creation of a general interest in the logical and practical as well as the æsthetical value of all forms of Expression. It provides a convenient general term under which to work both for a willing and loyal international consensus. It supplies a natural check upon wilful waste or misuse of the existing resources of language, by bringing to bear that deterrent of social and academic ostracism now sometimes misapplied to the hindrance of a healthy development.

We complain now of the tyranny of language just as we used to complain of the tyranny of slow and inconvenient modes of locomotion. Only then we became discontented, and our discontent issued in concerted and energetic efforts to improve what we had, and that on fresh lines; leaving the horse first for the steam-engine, then for the electrical engine. It once seemed that we could never send news quicker than a horse could gallop or a ship sail; next we sent it by steam, and now our telegrams travel in a few moments all over the world and sometimes arrive quaintly, 'before they were sent.' But in Language we may say that we are still in the 'horse' stage; just as an army with its cavalry is still in the oar and sail stage. Why not seriously face the fact that we have only to utilise an undoubtedly growing discontent and to apply it to the discovery of more effectual modes of expressing our minds; and that then we shall find a general raising of the standard of speech quite as feasible as the raising of the standard of news-sending?[1]

[1] Certainly the Elizabethan age cannot be accused of content with a ready-made literary vocabulary; it has been truly said with reference to Slang that "what Rabelais did for France, whose wit was still Gallic in his day, our Elizabethans did for England. They sought new words, as they sought new continents; their enterprise was as keen in the domain of

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There has been an immense advance in knowledge, involving revolutions in conception; but there has hitherto been no corresponding advance and no revolution in the expression of this knowledge, and of its relation to and effect upon our theories, our philosophical preconceptions and systems.[1] As we have just seen, there has been an enormous development in various forms of physical communication, but none in psychical ones. Yet the whole object of physical communication—even on trade lines—is to facilitate and develop psychical communication, —even commercial or merely journalistic.

We may welcome Mr. John Grote's warning [2] that it is not the fault of language, (as we are so absurdly told,) but our own fault that we are 'betrayed' by it. But that which he treats as a mere contingency to be guarded against, in fact describes our actual state: "a complete philosophical language at any stage of knowledge short of complete, say the present, would be a hindrance to advance: we do not want our language to fit any particular stage of our knowledge, because then it would not fit the next: we should be like growing boys in an old dress, cribbed, confined, embarrassed, not knowing what to do with ourselves." This, in fact, is to a large extent just what we are.

Our present vocabulary, and especially our current metaphor, only fits the pre-Copernican or at best scholastic order of things, and is pre-scientific in a sense which would have aroused energetic protest and entailed effective reform in the days of those classic forefathers whom we profess to revere.[3]

literature as in the golden realm of adventure. They found their words not in books, but in the world; nothing was above or below their vocabulary, if only it were strange and nimble-witted' (Charles Whibley, *Literature*, March 2, 1901).

[1] See note X. (B), Appendix.

[2] *Exploratio Philosophica*, Part II., p. 23 (1900).

[3] See note XI., Appendix.

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CHAPTER VII

WHAT we do want is a really plastic language. The biologist tells us that rigidity in organic activities can never secure accuracy — is indeed fatal to it. The organism can only survive by dealing appropriately with each fresh emergency in more and more complex conditions.[1] Only the utmost degree of plasticity compatible with persistence of type can give the needed adaptiveness to varying circumstance.

But at present we accept as a substitute for this true plasticity — this exquisite adaptiveness of the highly developed function-complex — either the cumbrous forms and the clumsy expedients of the barbarous mind, or the arrested skill which, with all its elaboration, misses the marks and is beside the points of a social state and scientific standard far beyond its range. Such an arrested skill in an organism would, in the sphere of natural selection, have ensured its elimination as the unfit.[2]

[1] For instance, in discussing the importance for plants of the possession of "a very plastic organisation, that is, one which will respond readily and *accurately* to the demands of the external conditions of life," Professor Farmer ("Review of Goebel on Organography," *Nature*, December 13, 1900) says that "plasticity is clearly only of use (and therefore will come to a like extent within the purview of natural selection) in so far as it will provide the organism with the power of striking the right note in response to a particular call."

[2] It is obvious that the 'moulding' of materials by the artist into complexes of beauty derives originally from the biological model.

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As the publication of the eighth edition of *The Foundations of Belief* is sure to direct fresh attention to that work, it may be well to refer here to Mr. Balfour's strong advocacy of the elasticity for which we are now pleading.[1] But it must be remembered that, as in the case of social order, the more complete the freedom conceded, the more inexcusable becomes the licentious use of such freedom. Such license degrades the nobility of the free citizen to the level of the mobsman and lowers voluntary or spontaneous consent to the reign of order, into all-destructive anarchy. Unhappily, as things are now, it is just this evil to which we are exposed, and of which in writings like this we are rarely or never warned.

It is never easy at the first glance to distinguish between the false conservatism, which thinks that to develop is always to deteriorate, and the true, which guards and cherishes the precious human heritage stored up and assimilated through the ages, the very condition of true development. Thus our present system of writing and printing, alike for all purposes, is supposed by some to be the permanently fixed form to be kept at all cost in a rigid immutability, while others would deform, deface, mutilate, or monstrify it as though there were nothing in it beyond some vulgar form of advertisement to be superseded by one yet more vulgar.

The true view of course is different from either. As we learn to realise what Significs can do for us in concentrating our energies on the development and the interpretation of all forms of Expression, we shall see that it must provide us at once with a more practical and more delicate sense of the fitting in modes of speech and writing. We shall realise that the paramount need, even in the use of alphabet and syntax, is to give in enhanced form to the thinker and the

[1] Pp. 364, 365, new edition (1901).

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poet, no less than to the man of science or of business, the power which the very invention of the alphabet has already given him as an advance upon the pictorial method. It is not a question simply of enlarged vocabulary. Perhaps, just as we have but twenty-six letters and a vast store of combinations, so a relatively small vocabulary might be made immensely more adequate.[1] It would be easy to illustrate the fallacy of supposing that, in proportion as we acquire new means of economy, abbreviations and methods of fore-shortening, we should lose in the quality either of the thought conveyed or of the mental process of assimilation; that, in short, thought would suffer more than ever from the principle of cram. This undoubtedly would be the case as things are now; but our whole point is, that a different condition of things is required. The complexity of a cell is not lessened by the fact that it appears to the naked eye a simple speck, and only reveals its intricacies under a strong microscope: similarly in a new generation definitely educated, if not to evolve a new aptitude, at all events greatly to develop an existing one, the necessary detail of process would not be

[1] There are few things more curious in English literature than the recent rapid evolution of the dialect story. There seems to be, at all events in our own tongue, an unconscious craving for a great expansion of current modes of speech. For these books and stories sell, although reading them must entail to the average man much trouble of a distasteful kind. If only we could get rid of the disfiguring and needless apostrophe this would be lessened and the effect doubled. Writers like Pett Ridge have already begun to discard it. But this may well be connected with the distinctive merits of English, admitted, as we have seen, by prominent foreign critics.

The *Athenæum* has told us (October 13, 1894) that "a German critic has recently reiterated what has often been said in these columns, that . . . the riches of the English language in simple composite words give it a paramount place." This points to special advantages in the pioneer work here advocated.

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omitted or slurred by the concentrative effect of signific methods.

As things are now, we think it necessary to realise all the points of our thought with the naked mental eye. This takes so much time that if a writer attempts to carry penetrative analysis beyond a certain point, he very rarely finds in his reader a corresponding power to assimilate his results. Many accusations of hair-splitting may conceivably be the result of this. There must be 'telescoping' in expression as in recapitulation; and we must be taught to allow for this as a matter of early training.

The phrase 'bad language' should gain a more general application, and include waste and misuse of words, abuse of speech, chaos in expression, degradation of painfully acquired and slowly rising standards of language. We are, happily, ready enough to censure and even punish profane or impure language: we go further, we socially ostracise the man who mispronounces a letter or misplaces an accent or a 'part of speech,' or mis-spells a word or drops his '*hs*.' But we rarely have a word of rebuke for the man who takes some well-known word or phrase in common or philosophical use, and proceeds without preface or explanation to twist it into a fresh reference. Nor do we chide the man who uses, as equivalent, words which embody valuable distinctions, or who uses the same word without warning in various senses. And no one seems to realise that if we take a well-known word or phrase with established (however conventional) associations and apply it in a new sense, *we may often create the need for a new word to express what has hitherto been the accepted sense of this one.* Yet if this is not supplied, we are deliberately introducing fresh confusion. True that flagrant cases are sometimes pointed out and deprecated by the reviewer or critical writer. But even he usually

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overlooks the broad facts that language is the most precious 'tool' of humanity, that it is still strangely backward as compared with other intelligent activities, and that it is morally wrong either to tamper with the expressive treasure which it already offers as the result of long and difficult acquisition, or to waste in the smallest degree its discriminative power.

At present our system may be compared to the child's copybook hand, while the system we want may be compared to his father's legible, yet free and running hand. Or we may say that our system is like the merely mechanical photograph, recording in impartial detail, in blank and literal monotony, the objects seen from its own point of view; whereas our true need is supplied by the ideal artist, whether he works by pen or brush or chisel or camera; that is, the beauty, the truth, the goodness, *i.e.* the significance of the world.

But of course the question at once arises, How are we to obtain this or its analogue? An atmosphere, though charged with moisture or fine dust, yet gives us a clear and distinct view of the manifold objects around us, and also gloriously transfigures with the messages of colour the worlds of land, sea, sky. How are we to gain a graphic system which shall be a true analogue of the atmosphere? For we need transparency and translucency, which may be ignored, which never obtrude themselves, and which yet bring loveliness of their own.

It has been pointed out[1] by Mr. Arthur Symons that the difference between the artist and the executant (constantly ignored) lies here. (And the artist, be it remembered, is one with the true Man, be he seer, thinker, scholar, or worker. For the true Man is never merely these, that is

[1] Arthur Symons, *Academy*, December 1, 1900.

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'executant.') In the case admirably described by Mr. Symons, after the task of the executant had been 'magnificently accomplished' the artist began: "the face had been like a mass of clay, waiting the sculptor's thumb. As the music came, an invisible touch seemed to pass over it. . . . Then, in that instant, a beauty which had never been in the world came into the world; a new thing was created, lived, died, having revealed itself to all those who were capable of receiving it."

Now, can we suppose for an instant that this living power which has taken to itself all the exquisite adjustments of material instrument given us by time, would not also work the simpler forms of its magic through a mere flute, a reed? And will it be outpaced in time to come by growth in our command of natural resources? Supposing some day we acquire the means of 'making music' without strings or pipes as now we can send thoughts great or little without wires? Then surely the artist will here, once more, be at home. He will rejoice to be freer than he can be now from the instrumental limitations which are the whole stock-in-trade of the mere executant.

It is not possible here to follow out in the region of literature suggestions like these. Enough if we recognise a principle which, once grasped, furnishes in good time and in practical form its own applications.

It is strange that we appreciate our sense-wealth indirectly while neglecting and wasting it directly, and omitting to cultivate it in the young. We can say nothing too good of the really fine writer, the master of language, as we inconsistently call him. We are all ready to praise his force and his significance; his beauty of diction, his gift of 'choosing the right word' and of arranging and balancing his sentences so that his reader should see with him, though deprived of the

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enormous help of manner, gesture, intonation, and the common thrill of an audience.

But the moment we are asked to respect what such a writer first and most respects—the value of distinction and consistency in its application—we cry off. Oh, we say, that is pedantic; that is to make words money, not counters (whereas they are more than either). Even Huxley himself—that expert in lucidity—could write, in flat contradiction of his own practice, that "it really matters very little in what sense terms are used, so long as the same meaning is always rigidly attached to them."[1] Did he really think it possible or desirable to attach, *e.g.*, the sense of dryness to the word moisture, without cruel waste of attention and memory, and injury to the word reversed in sense-value? Did he really suppose that such a rigid attachment was even possible, in view of the living forces which influence and develop language?[2]

[1] *Hume* (1894), p. 86. [2] See Note XII., Appendix.

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CHAPTER VIII

We hear much of Style nowadays. Too often this means the use of rich (even of luscious) word for poor or stale thought. Mean thought struts in, robed in splendours not its own. Proud word and mean idea are the sorry substitutes for the humble word which is content to be a way to life,—to that noble thought-life only to be won through truth. Or, as some one well said, it is a wrenching of words into unusual collocation for the sake of effect. Walter Pater knew better than this: "the essence of all good style, whatever its accidents may be, is expressiveness"; while Bagehot described it as "the practice of writing like a human being."[1]

[1] I cannot resist quoting here the first words of a brilliant appreciation of Pierre Loti in the Literary Supplement of the *Times* (March 14, 1902): "At first sight it would seem indeed that Pierre Loti's chief and distinguishing gift is that of definite vision. He *sees* the object before him, man or landscape, with the same easy, vivid precision, the modern categorical eye, which, to us, seems most peculiarly the attribute of Mr. Rudyard Kipling. Only, with M. Loti, it is the eye of a Frenchman among Frenchmen. With him, and beneath his most careless, his most contemporary flippancy of epithet, we are always aware of the training, the school, the severe and self-imposed limitations of the ardent and scrupulous Writer. A long national tradition enriches and clarifies his simple yet supple phrasing. Where the Englishman cuts to the heart of his subject with swift and coloured metaphor, regardless of all but the ultimate veracity of his effect, M. Loti, with equally definite vision, ponders,

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But in this connection suppose we ask questions like the following:

How much can we convey—the one to the other? How far, that is, can all, or at least many, be enriched with the treasures of each?

How can we make that which we convey growingly significant—that is, symbolic and suggestive, pointing beyond itself, within itself, below itself, above itself?

How can we discourage waste and encourage creation: how can we help words to decrease while thought increases and expression develops with it in a thousand exquisite forms? What are the limits of the articulate?

How can we escape the grinding tyranny of the vulgar mind which brings the roller to crush each point of life in meaning, or which infects the language of its betters with its own parasitic growths? And how best cherish the force and aptness, sometimes indeed the beauty and dignity, of the 'common' speech of the poor?

How can we best secure the offered speech-gifts both of past and future, and best exclude, or at least repress, all which tends to degrade instead of ennobling man's experience?

How, especially, may we best seat metaphor on its true and splendid throne, chasing the impostor and usurper from the kingdom of our speech?

Once more, the answers to such questions can hardly be hoped for until we have begun to train a generation to see the urgent importance and the vital reference of that signi-

measures, selects; presenting us at last with some impression too vivid and personal to be 'precious'; too much filtered and elaborated in its cunning simplicity to be popular; a thing compact of art, and valuable because of its serious and careful beauty." The only element one misses here is that to which, ultimately, all the value of such seeing is due. As far as he goes and within definite limits, Pierre Loti is intensely significant.

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ficance which is sense but more yet, meaning but more yet —the central value of all man's experience, the gift of true Expression which creates and in another sense is created by that which is expressed.[1]

This suggests a fresh study of what, by a true analogy, we call lucidity. But the word has a wide connotation. In its best sense it represents something of priceless value. Too often, however, it merely means that we have been saved the trouble of interpretation and of thinking for ourselves; we have been given ideas, inferences, conclusions, ready made and unmistakable; nothing fresh has been added to our store. Of course, even in this case we may receive the boon of a clearer knowledge of our own minds and of facts which we had so far but vaguely or even confusedly apprehended.[2]

But it is safe to say that the merely lucid writer never means more and often means less than he seems to mean —to the average reader. As a rule, the more a man means the more obscure to most of us he becomes. And why? Because in the majority of readers the channels of attention and interest and comprehension are narrowly restricted, and it requires an effort to form new ones. The previsional thinker is obscure to the man whose mind is bounded by the present; whose mind lacks, that is, the scientific note of prevision which ought to be the definition of all thought in the highest sense of thinking. Again, why? Because

[1] The experience of deafness teaches the enormous difference between *sound*-hearing and *sense*-hearing. This has its counterpart in mind. When we care about things either for mere noise or for music, we are deaf to the store of sense, and thus can never rise through meaning (= *intended sense*) to significance.

[2] M. Paul Bourget's article on Victor Hugo (*Times*, February 26, 1902) admirably sums up what is here suggested: that lucidity and force of expression, no less than beauty of linguistic form, may far exceed the user's power to think or even to feel.

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the only language available insists on perpetuating what the race in its most advanced symbolisers and spokesmen—the men who signify most and thus are of most importance—are growing out of. The efforts of a child learning to talk are obscure to one that is only learning to walk and is content with uttering mere noises; the efforts of a child learning to write are again obscure to the one which is only learning to talk. And the child in its first attempts to write carries on the movements which will soon become superfluous, just as we carry on, in our advancing thought, symbols and modes of expression which we must needs outgrow.

But there is another charge to bring against that spurious ease in being understood that we often admire under the fascinating term lucidity—as if it really brought to light the hidden things of life. It never means more than the speaker or writer meant himself, while in proportion as we are prophets in the scientific sense we mean more in everything we say or do than we can possibly be now aware of; hedged in as we are by the limitations of age, race, contemporary or accessible knowledge. We may be quite sure that unless we mean more than we now think we mean, our words are not of much account in the long-run.

It would be suggestive to look a little at what lucidity connotes. It may convey the idea of an object which is shining with reflected light or one which is translucent; or it may simply mean, a means whereby objects in all detail become definitely evident. When we complain that a writer is 'obscure,' do we mean, not transparent, or not sharply outlined, or not reflective or radiant? In using the metaphor we ought to observe these distinctions. Or is the most lucid writer transparent, the next best translucent, and the obscure one opaque?

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(These have been described as the three successive stages in the condition of the windows of a famous museum!) Do we want to see into and through or to see by what is written; or do we want simply a brilliant surface? And is the writer whose attainments or merit we call 'solid' credited with translucency like a block of ice? We are at least loth to call him dense. Perhaps some day we shall realise that the ideal organic solidity is transparent, and modify our figures accordingly.[1] This view of lucidity, it must be admitted, depends on the assumption that the clearest mind is that which is nearest to a perfect medium of light. But of course we may take the more ordinary view that the writer (or his mind) is the analogue of a lamp and sheds light on his subject which is either lucid, *i.e.* clear, searching, perhaps even brilliant; or obscure, *i.e.* dim and indistinct. The analogy works in both forms.

[1] The very important discovery by Mr. Thayer, which appears with an Introduction by Professor Poulton in *Nature* of April 24, 1902, is suggestive in this connection. For as we are compelled to express the mental in terms of the physical, we may as well do this relevantly.

It appears that the vast majority of the Animal Kingdom is coloured "so that its tones constitute a gradation of shading and of colouring counter to the gradation of shading and of colouring which light thrown upon it would produce," so that "such object will appear perfectly flat, retaining its length and breadth, but having lost its appearance of thickness, and when seen against a background of colour and pattern similar to its own will be essentially indistinguishable at a short distance." The author adds, "I believe (this) will ultimately be recognised as the most wonderful form of Darwin's great Law."

In this case, then, it is that very 'solidity' which we use as the governing figure for the materially real which when seen in full light may, merely by an arrangement of shadow, become invisible. In the mental world this would seem a bull or a fanciful paradox. And yet it may be that in abstract thought, *e.g.* geometry, where we have to think away the irrelevant actual thing, we throw so much light upon a given subject that we render it invisible to all but the specially trained eye, and are consequently accused of dealing with nonentities and the unreal.

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The reader of the lucid writer says, The whole question or subject is perfectly clear to me; or, I have no difficulty in following his course or line of thinking. But here lies a special snare. The more we know and the better we know it, the more we realise that in the popular sense we cannot explain things as the lucid writer seems to do, 'off the reel.' In other words, the more inadequate we see explanation to be the more misleading we discover lucidity to be, unless we remember its narrow limitations and its provisional character. Then, of course, it is priceless, and its absence is a vice or misfortune. Here we may perhaps quote Ruskin: "Be sure also, if the author is worth anything, that you will not get at his meaning all at once. Not that he does not say what he means—but he cannot say it all; and what is more strange, will not, but in a hidden way and in parables, in order that he may be sure you want it."[1]

[1] *Sesame and Lilies*, p. 36.

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CHAPTER IX

THIS brings us to the subject of ambiguity in its various senses and forms.[1] Voluntary and beneficial discord may be compared with intentional and beneficial ambiguity. In

[1] It is a commonplace that increase of knowledge, and with it development of conceptual and critical power and of the experience which we call civilised, brings with it an enlarged vocabulary. The English labourer finds about 300 words enough; the man at the other end of the intellectual scale if he be a writer has about 2000. Now we are often told that it does not matter at all how small the received vocabulary is; that context sufficiently determines the various senses of a word; that the acquisition of a word for each meaning would correspond, say, to an alphabet of fifty letters, and would become cumbrous and mechanical like the Chinese. True. But in that case context must become far more delicately and discriminatively indicative than it now is. We must at least be sure what enlarged vocabulary stands for. At present, context often presents us with three or four, perhaps half a dozen, alternatives. True that the reader of high interpretative power—one who has been trained to be significant, and who has had his natural sense of Meaning and Significance made keen and exquisite, will in the future choose almost unerringly the right alternative. Like the expert on the one hand, and the genius, the man of prophetic insight, on the other, what to us now is the faintest or most fleeting sign, escaping our attention or apparently of no account, is to the significantly trained mind an unmistakable and imperative signal, pregnant with consequence.

"Double meanings lurk in the vacillations of usage. They are a permanent violation of the fundamental demands of logical consequence or discipline in the use of the sign, and are pregnant with great dangers for thought" ("Signs and Symbols," Schroeder, *Open Court*, November 3, 1892).

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one sense discord may be described as the condition of true music, of which the essence is significant and ordered harmony. So ambiguity of which writer and reader are equally aware, and which is adaptive and meets new emergency (exigency), is the condition of the highest forms of expression. But there are three causes of involuntary discord, all fatal to any kind of music. (1) Defective 'tuning' of the instruments used. (2) Defective 'ear for music' on the part of performers. (3) Defective larynx or lungs in singing, or defective hands, fingers, arms, in the use of instruments, organic distortions or morbid growths; preventing perfect command over the sounds evoked.

But while intentional discord is in music good, intentional discord in conduct is always evil. 'Discord' is a metaphor of evil. On the other hand, in the intellectual sphere, Fallacy answers to Discord; and there the immoral thinker may deliberately use fallacy which he thinks safe from detection in order by an apparently valid train of reasoning to achieve some harmful result. Involuntary, unconscious Fallacy is always mischievous; it is impossible to use Fallacy as in music we use discord. This suggests an illustration.

Suppose that man had made more and more perfect instruments of music but had never conceived the possibility of tuning them, and then had wondered at the confusion and discord which he supposed to be the inevitable drawback of all music. This would roughly correspond to the present state of language. Then when some one had discovered the possibility of tuning, he would also discover that what he had till then called music was not worthy the name; he would, in fact, discover what true music and an 'ear' for it was. But until then how such a proposition would be sneered at! To make the intervals exact? To harmonise

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an orchestra into accurate correspondence? To obtain a quantitative precision? Why, that is to mechanise music; to turn it into an exact science; to degrade it to the level of arithmetic and algebra!

To return to the main question; the real difficulty often depends not on the ambiguity of word or even of phrase, but on the ambiguity of context. We take for granted that among competent writers this is rare; and in doing this we assume, not the competence of authors, but what, in fact, is far rarer, the self-evidence of expression in words. Gesture is less ambiguous, but still is ambiguous except to the keen and delicate observer.

Even J. S. Mill seems to forget that context itself in its turn needs context to interpret it, and has no better context than the very words or sentences which it is to elucidate. It is like jumping off one's own shadow. Context is treated as though it were the atmosphere which surrounds planetary bodies and gives us diffused light. But the atmosphere cannot change places with the earth, the relation is not reciprocal; whereas the relation of context and word is reciprocal.

Of pernicious Ambiguity there are thus three types. (1) We have the defective 'tuning' of language. Everywhere we find the slight yet fatal discord resulting from neglect to ensure that perfect relation between every element of Expression which ought to reign in the articulate as in the musical world. Thus we need to train a generation to see the need and imperatively to demand its supply. (2) We have the defective mental ear and eye on the part of the 'performer.' This he shares with his hearers and readers, so that neither the one nor the other discovers the true cause of the general inability to bring the greatest of thoughts into definite consciousness, or realises the endless

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confusion which at present to our shame prevails.[1] (3) We have distorted organs or instruments of expression, preventing the full use of our true articulate and graphic powers. As things are, we even say that this or that truth or reality —this loveliness, that good — cannot be expressed, are beyond expression; whereas truth and beauty and goodness actually *are* expression: that which conceives them is itself Expression. The fact is that as children we have never had our Signific powers systematically trained, and thus our organs of significance are not yet fully developed, and we are often unable to detect the organic deformities which hinder us in expression.

Are we then to discard *en bloc* the outgrown in language and begin again? No; we are to do once more what has always been done until 'modern' days by the greatest thinkers of the world; only we are to do it more thoroughly, effectively, and universally than has ever yet been possible. For by a now possible international consensus and the united wisdom which this means, we are to train up a whole generation in the vivid and steadfast sense of the paramount duty of contributing to a vast advance in the resources of

[1] "The term 'radiation' has the advantage of avoiding any suggestion of the fallacy that there is some essential difference in the nature of the ether-waves which may happen to terminate their respective careers in the production of light or heat or chemical action or something else; but it is, unfortunately, impossible in the present condition of things to use it as freely as one could wish without pedantry, and we must still often speak of light or of heat when radiation would express our meaning with greater accuracy" (*Curiosities of Light and Sight*, Shelford Bidwell, 1899, p. 21).

Yes, we 'must' still continue to make important names a quite needless source of the very confusion we are always deploring, and of which we reap a specially bitter fruit. But we might as well say that we 'must' use a musical instrument out of tune or with strings missing, or the wrong shade of colour in painting, etc., because in the present condition of things we cannot do otherwise! Why do we tolerate in the most important case of all what we should tolerate in nothing else?

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Expression. This indeed will pave the way to restatement of problems in the highest and best sense. Such an achievement will lead, in the case of the thinker, to results in conception of which at present we can no more 'dream' than the seventeenth century dreamt of gravitation, or the eighteenth of the work of Darwin or Pasteur.

But these results, as tending everywhere to transcend by intensifying the significance of what we call 'limit' or 'end' or the 'finite' or the 'concrete,' will make possible a positivism in a new and higher sense, recognising the abstract, the absolute, the infinite, as owing their value to their negative character; to their antiseptic power, their neutralising and sterilising force. For all such negative ideas are not creative but protective, forming a natural criticism which rules out a lower, a parasitic or fungoid life, until we can reach the higher life through truth.

When we have once seen this we shall begin, as already suggested, to think in cube, in volume, in sphere: we shall reunite the current oppositions and apparent contradictions into a world-whole, which shall then become the universally accepted starting-point of new mind-revolutions in new orbits, round new advancing centres of energy. New? But that is monocular; such orbits and such centres are as much 'old' as 'new,' and better than either; for no such current terms, as we use them now, are rich enough to meet the case.

Once more: we think on the flat and in a straight line; we must learn to think in the round and on a curve.[1] But why? (For this is not a casual or arbitrary metaphor.) Because we may then find answers waiting for us of which we must else despair. But if we attempted even to indicate what these answers may be, the result would be the same

[1] See below, p. 233.

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as the attempt to give the results of the spectroscope before that instrument had been introduced and used. Until then, it would only be possible to foresee that its messages would be of the highest value and would tend to solve problems otherwise insoluble.[1]

So again, we think in specks and lumps of stuff; we must learn to think in throb and complex whirl or intricate convolution. Lastly, we think on a basis and we must learn to think in orbit; we think in halves and must learn to think in wholes—or to confess that the enigma of life arises from this half-thinking. When we see the meaning of the enigma, half our perplexity is gone; we discern the potency and promise of our divided state. Although our minds, like hemispheres, are incomplete and even severed from their true complement, we can conceive how satisfying would be the result of entering into wholeness. Oh for the commissures of mind to grow and supply the link which gives the full current of Life, known as yet but indirectly through what we sometimes call faith and sometimes insight—the first strand of the commissure of the future! Our thought must accordingly be binocular—in three not two dimensions; and this must alter all our figure-scheme.

[1] As it happens, science furnishes us with an apt illustration of this difficulty. In his forcible protest against the present waste of coal, Professor Perry (*Nature*, March 20, 1902) suggests that "an organised attempt be made to convert the energy of coal into electric energy in some form of engine which shall not cost more or have greater weight than a steam-engine of the same power," and continues, "many men have advanced the subject beyond its first principles; they know of directions in which to work with prospects of success. In the animal machine the thing is actually done; but of this machine the mere conversion of fuel energy into mechanical work is not the most important function, and the machine is very complex. Still, in it we have no heat engine, but the sort of thing we are looking for."

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CHAPTER X

COLLOQUIALISM reveals tendencies as well as attitude and character of average thought, educated or ignorant. For instance, we come to or take leave of our senses. We never do that to our meanings, and we cannot even talk of our significances. 'He is out of his senses' as equivalent to 'out of his mind' (a pregnant commentary on the current philosophical controversies) is a case in point. So, 'I cannot stand it.' (One longs to say, 'move it then' or even 'let it push you onwards!') We 'take our stand' and a 'point of view.' We do not so often 'start on our way.' No; our thought has usually one dimension only, and we take care that our use of even that shall be statical. We boast of 'our own line,' not even of our own 'vector.' And so we fix ourselves proudly on a point from which we see along our 'line' in one direction only. There we 'take our stand' and entrench our 'position.' Presently something of vital importance to us (if we are to escape being 'stranded') requires us either to move on to a fresh point of view or change the whole direction of our line (that is, to learn to radiate from a centre); in fact to take to some other line, secure of returning to the first and to our original point, whenever we like. But that seems to us betrayal or desertion. We conceive our ideal as fixed. We have hitherto taken, so to speak, a straight line and supposed a curve to be a

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deviation from that, probably due to laxity or weakness. Now we may take a curve and say that a straight line is but a small part of it, only so small that the curve is imperceptible. And everywhere we may take the moving from point to point and not the line thus made, as our image. But in truth we have not yet learnt how to translate the dynamics of science for mental and moral use.

Much is said on the subject of meanings in two linguistic studies—one more popular than the other, but both very interesting—recently published in America.[1] But even here we find slipshod or confusing usages apparently endorsed by the authors, or examples of the very errors which they themselves denounce. And this, in treatises on language itself, in which the writers were bound not only to be unusually accurate in diction but to warn readers of possible sources of confusion.[2]

This being so, let us again examine some of the acknowledged metaphors by which we now use the world we call material or actual, to express the world which we call spiritual or real. Certainly one of the worst used of these is the useful metaphor of the root. Rightly employed together with the other main ideas connected with the plant world, it would contribute to a lucidity of exposition at present impossible.[3] Yet, no matter where we look, we find it

[1] *Words and their Ways in English Speech:* Greenough and Kittredge (1902), and *Lectures on the Study of Language:* Oertel (1902).

[2] See Note XIII., Appendix.

[3] "The root is merely a prolongation downwards of the stem, and the part where they unite is the collum or neck. Afterwards the root is distinguished from the stem by the absence of a provision for the development of leaf-buds" ('Botany,' F. H. Balfour, *Encyc. Brit.* 9th ed.). ". . . The living protoplasts take the first place as the essential portion of the tree, and all the other features are important mainly as ministering to their individual well-being and to their multiplication" ('Physiology of Plants,' J. R. Green, *Encyc. Brit.* 10th ed.). Our forefathers, had they

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used in such a way as to destroy its value and falsify thought. We are told, *e.g.*, by Blackstone (in 1769) that "though the forest laws are now mitigated, yet from this root has sprung up a bastard slip known by the name of the game-law." In Welton's admirable little book on the *Logical Bases of Education*[1] he most truly says that "looseness of expression is sure to react more or less on thought," and then goes on: "Indeed, it is continually found that ambiguities such as we have been considering are the root from which spring many of the fallacies, or erroneous interpretations and inferences, which meet us on every hand." He may well add that "the educator can

known the fact, would certainly have spoken of the 'vital centre' or 'spring' of the matter where now we say 'root.' But it may be well here to cite Dr. Ogle's translation of Aristotle's *Youth and Old Age*, 1897, p. 62:—

"There is a great contrast in this matter between plants and animals. For in man and in man alone, owing to his erect attitude, the upper part of the body is turned towards the upper part of the universe; while in other animals it is turned neither to this nor to the lower aspect, but in a direction midway between the two. But in plants that are fixed to the earth and derive from it their nourishment, the part by which they imbibe nutriment, that is their upper part, must of necessity always be placed downwards. For the roots of plants are analogous to what is called the mouth in an animal, being the organ by which food is administered; and in the case of plants the food is derived from the earth, etc. . . ."

And to this bit of the translation is added the following extract from Bacon's *Novum Organum* in a note (Note 7):—

"Nor is that an absurd similitude or conformity which has been remarked between man and a plant inverted. For the root of the nerves and faculties in animals is in the head, while the seminal parts are the lowest—the extremities of the legs and arms not reckoned. In a plant, on the other hand, the root (which answers to the head) is regularly placed in the lowest parts, and the seeds in the highest" (*Nov. Org.* II. xxvii.).

(I am indebted for this extract to the kindness of the Translator himself.)

Yet more curiously, Linnæus himself wrote that *plantarum ventriculus est terra* (*Nature*, March 2, 1899).

[1] (1899), p. 61.

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engage in few more useful tasks than that of training his pupils to clear and exact expression of meaning." But as this absurd usage is practically universal it is needless and indeed invidious to specialise cases.

On the other hand, we find the true natural and scientific use of the figure in Isaiah (chap. xl. v. 24), "yea, their stock hath not taken root in the earth." Let us take as illustrative of practical loss the man who, as himself compared to a tree, sends forth his mental 'growth-points,' (1) into the earth where he gains that support and elasticity by which, while he remains sound, he resists the tossing of the wind, and also that nourishment by which his life is energised and fructified; and (2) into the air and sunlight in which he breathes and brings forth the 'leaves, flowers, and fruit' of intellectual and moral achievement.

This is a distinct help to thought. For the great thinker may truly be said to strike roots into the world on whose surface he lives; that is, he is not content with the truths which lie on the surface, and he needs and gains for his thought stability. But also he puts forth branches into the air which inspires him as he breathes it; more yet into the light of a rational and moral world. Those who, not having yet learned the lesson of an 'erect posture,' look only at the stem on a level with themselves, assure such a man that his aspiring into a region above their heads, where he finds the power to 'flower and fruit,' or his plunging into one below that surface to which they are confined, is a question of mere illusion, or at best of poetical imagining.

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CHAPTER XI

SIGNIFICS, as enabling us to deal afresh and in a practical form with the ancient problems, must therefore be considered first as a method of mental training, which, though implied in all true views of education, is not yet practically recognised or systematically applied. In a special sense, it aims at the concentration of intellectual activities on that which we tacitly assume to be the main value of all study, and vaguely call 'meaning.' Its instructive and disciplinary value must be secondary to this, as they are both ultimately dependent upon it.

If we take any special scheme of thought which claims to be ultimate philosophy, we shall find it represented as 'resting on a basis' or on a foundation. Of course there is a class of ideas which may rightly thus be likened to a boulder or a building. They are fixed or they are helpless: they are beyond all lifeless. But they are resistent and persistent. There is another class of ideas which may be said to be 'rooted to one spot': they are living and they can grow, but they cannot move. There is another type of ideas which are, so to speak, free to move—on the earth, in the water, in the air (those again giving distinctions of great value). And again there is another—what word shall we use? for class and type, tribe and kingdom, kind or species, are all metaphors which commit us — another organised group of ideas which is not only living and free

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to move in three mediums as in three dimensions, but is fully conscious, which has also a reasoning mind. . . . Here we are suddenly pulled up: we were about to say, 'which has and interprets ideas.' But to write of 'the ideas of a group of ideas' is merely meaningless.

It seems self-destructive to use the signs by which we express mental facts, as metaphors for these very facts themselves. If we compare an 'organised group of ideas' to the highest physiological organism we know, we cannot again give this organism 'ideas.' Yet, though we want, so to speak, the conception and the word for 'idea' in a higher form (though certainly not the self-refuting 'absolute'), language in its present stage fails to give us what we want.

Perhaps one reason why the 'deepest' thoughts fail to find any expression which our fellow-man can read is that we have not yet learnt that consciousness, and thought itself, are but a metaphor quarry for the expression of what stands in the same relation to mind, as 'mind' does to 'matter.'[1]

This, however, leads straight into a region which one thinker will call that of reality and another that of illusion and dream. These three words, consciousness, mind, thought, like feeling and will and other 'mental' terms, must, as we are now, constitute a natural boundary of expression. And they are used in ways so inconsistent, often even so casual and capricious, that before we try to use their associations figuratively, it will be well to ask ourselves what we really intend to signify by them. The true answer of course is that we only 'know' vaguely and casually what we mean by them. A thinker will urge upon us his particular experience as that of the 'Human Mind.' In doing this he is unconscious that he is the victim of a fallacy which is betrayed by the confusion of

[1] See Note XIV. (A), Appendix.

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senses in our philosophical vocabulary. And generally, in ignoring that confusion he makes it worse by assuming that his own value for 'mind' or 'consciousness' or 'will' or 'feeling' is that of his reader, and that it does not matter even if he uses, *e.g.*, consciousness for mind, or thought for either, since he is aware of no loss in such use.

Take again our use of '*under*standing.' This, in figurative reference, ought always to symbolise the highest level of our powers. But as we commonly use it, it ought to be '*over*-standing': we are dealing, not with a world above our heads, but with firm ground under our feet. We reason about both and their content, but to *under*stand is after all our ultimate rational duty, since we belong to a greater than planetary world. Yet if we try in this way to make language bring more clearness into current ideas, we are at present either laughed at or censured, and gravely told that this is mere playing with words or else misusing them.

For instance, we cannot yet use without grotesqueness or at least a jocular flavour some of the best of all our metaphors. We have even lost the wisdom of our ancestors, who understood the 'bowels' in their poetical value. Now the word is hard for a poet to use. And how can any one, and least of all a poet, speak of the viscera in figure and show us how we live a visceral life, a spinal life, and finally a life including these, of cerebral cortex: the two first faithful ministers to the third, but apt to get the upper hand through failure of the highest controlling 'centres'? Yet there are truths which can only thus be expressed.[1] The life energies rise from merely working the animal needs, to ruling and directing the human powers. How far this state of things is responsible for the impotence of much of our ablest thinking is perhaps hardly suspected.

[1] See Note XIV. (B), Appendix.

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Whatever view we take of what we agree to call 'mind' and 'intelligence,' one inference we shall all concur in making. It 'means' the possibility, if not the necessity, of what we vaguely call 'meaning' and practically identify with sense. What exists and what happens, whatever else it may be, cannot, we say, be wholly 'unmeaning.' We really, however, 'mean' here 'wholly senseless' if only because 'sense' alone makes it 'fact' to us. The only question is, in what sense has it 'meaning,' and how far may we or can we at present trace 'meaning' in it? It may be hoped that the haunting spectre of 'chance' (or 'luck') as something which defies both law and order and sequence of every kind—a sort of patron-deity of caprice enthroned at the heart of the natural—has been finally laid by the careful definitions we owe to scientific thinkers, and that the 'fortuitous' is now recognised as either something of which the relations are as yet unknown or something which is not the result of consciously purposive action on our part. In short, 'chance' is the relatively incalculable and the wholly unpredictable. Thus every 'co-incidence' coincides by virtue of some orderly combination just as much as a previously designed meeting could do. Only in the first case we cannot, and in the second we can, trace the antecedents of the experience. In both cases we have something which we vaguely call meaning.

But, as we have already seen, it is when Man asks what is the meaning of the world and of the life upon it, and recognises that nothing must be excluded from the astronomer's scheme; when the problem of evil or suffering begins to distress him; when he begins to ask whether wrong here may be righted 'elsewhere'; when he speaks of aspiration, of higher aims and hopes and standards, a 'let

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us eat and drink, for to-morrow we die'; when he discovers that this attitude of demanding the inclusive and the transcendent 'centre' and looking there for his answers, is the only one tolerated by science; it is then that he enters (though here only tentatively or partially) the true realm of meaning, —which in this sense is solar. Surely here then we have a word of great value. The word 'heavenly' has acquired a specially religious meaning as 'sky' has retained a 'material' one and 'cloud' a depreciatory one. But 'solar' appeals at once to the scientific, the philosophical, the religious, and the practical instincts. It gathers up all our ideas of the extra-earthly source of energy, and is equally interesting to the students of fuel questions or to those of mechanics and engineering, and to those of 'universals' or the 'transcendent,' or of 'magic and religion.' Yet it is as absurd to ask for clear-cut definite statement of 'solar' fact in 'planetary language' as to ask for algebra or geometry in terms of arithmetic. There is no gulf; but the one must rise to the other.

Here, however, it is necessary to anticipate an objection which will at once occur to the reader, and unless met would tend to sterilise the argument of the following pages. The triad of sense, meaning, and significance is not quantitative but qualitative. We do not get therein a strictly measurable world within which you merely have three scales or ranges of experience, as in the 'planetary,' the 'solar,' the 'cosmic.'[1]

[1] A friend points out that Aristotle insists (*Nicomachean Ethics*, Bk. iv. chs. 2 and 3) "that true beauty implies greatness, the grandeur which belongs to material bulk subserving a worthy end." He says (iv. 2, § 10): "As a work of art, that is most valuable which is *great* and beautiful; for the sight of such a work excites admiration, and a *grand* thing is always admirable." And again in iv. 3, § 5 he says: "Beauty implies stature; small men may be neat and well proportioned, but cannot be called beautiful." No doubt this is a true interpretation of a principle of Greek art. The noblest works of Pheidias, the Athene in the Parthenon and the Zeus of Olympia, were colossal.

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The use of this analogy labours under the same disadvantages as the familiar examples of our already established quantitative standard. When we speak of a great mind with its wide outlook, its high aspirations, and its profound knowledge, we are, of course, open to the deserved retort that value, which we are thus trying to describe, can never be a mere question of size or amount, position or dimension.

Our only direct knowledge of the solar and sidereal worlds is, of course, a question of measurement, number, and physical (or chemical) analysis. But these and other quantitative determinations are plainly incongruous as applied to questions of what we call 'mind,' although, alas! we allow them to master us in cases like the idea of 'everlasting life,' as though amount and not worth were our main demand. Yet the fact that man seems to use them everywhere and at all times as thus applicable may well suggest that, as indeed in some cases we already see, quantitative changes may always at a certain point involve qualitative ones.

Of course we shall be at once reminded of the supposed dictum of science that there can be no 'life' (and therefore no consciousness) in the sun, and that we have no evidence of 'life' in any other planet. Quite so. Here let us remember that in English our very word for the living, evolved by what science, again, pronounces to be a true instinct, is the 'quick.' The human rate of life is adjusted to planetary conditions. But there is no reason why this should not be changed; why, in the pregnant English idiom, we should not be 'quickened.' Physiological death, from this point of view, is a slowing down. One reason why life is supposed to be impossible in the sun is that vital activities, as we know them, could not keep up with the tremendous velocities of solar heat, and would be destroyed

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by dissociation. Only, if we have to own, on indirect evidence, that there probably exist, *e.g.* in Sirius, temperatures which we cannot reproduce in the laboratory here, why are we to assume that there are no forms of life (and of consciousness) more intense than our own, and therefore more capable of resisting dissociative influences? We have recently discovered that some forms of life can survive prolonged exposure to far lower temperatures than had been supposed possible; we may have next to discover that another form of life (raised into abnormal 'intensity') is found to be capable of corresponding resistance to heat.[1] Until it became possible to reinforce the telescope by the sensitive plate, many stars, of the existence of which we now have indirect witness, were beyond our ken. Such indirect evidence of the existence of more highly resistant because swifter forms of life may well some day be ours.[2] Anyhow

[1] See Note XV., Appendix.

[2] See, *e.g.*, the strange pathological fact that to the maniac fire seems to have an irresistible attraction, like the candle for the moth, and to give him no pain when he has flung himself into it.

In this connection it is interesting to remember Nikola Tesla's answer to a challenge to show that an electric current of enormous power might be innocuous to an intervening organism. He demonstrated that "powerful electrical discharges of several hundred thousand volts, which at that time were considered absolutely deadly, could be passed through the body without inconvenience or hurtful consequences," and adds, "I have produced electrical oscillations which were of such intensity that when circulating through my arms and chest they have melted wires which joined my hands, and still I felt no inconvenience. I have energized with such oscillations a loop of heavy copper wire so powerfully that masses of metal, and even objects of an electrical resistance specifically greater than that of human tissue, brought close to or placed within the loop, were heated to a high temperature and melted, often with the violence of an explosion, and yet into this very space in which this terribly destructive turmoil was going on I have repeatedly thrust my head without feeling anything or experiencing injurious after-effects" (*The Century Magazine*, June 1900, pp. 204-5).

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one must come back to the position of science, which is that nothing here can be assumed to be independent of that sphere of larger possibilities which we call solar.

And there is another consideration which must not be lost sight of. Science has shown us that when the development of the spine with its appropriate nervous system from the primitive notochord had reached a certain point, development on the spinal line ceased, and a new energetic and directive centre, that which we call *par excellence* the 'brain,' was evolved. Now, of course, we may if we choose, speak of the spinal brain; but none the less this expression has become for us to some extent metaphorical; the brain is now unlike and quite distinct from what we mean by the spine, although of course perfectly continuous and co-ordinated with it. Thus if we are to conceive a 'solar' form of life and consciousness, we should expect it not to present a merely enhanced degree of our present conditions, but a development which should bear to the one now reached a relation similar to that between the cerebral cortex and the spinal 'brain.'

We may remind ourselves here of Kant's famous saying, that two things fill the soul with evergrowing admiration and reverence: the starry heavens above and the moral law within us. Anti-materialist though he was, he was not afraid to express the same reverence for what to a lower type of mind would have been a merely material world, that he felt for the highest forms of intelligence. This being so, what then are our relations with that which lies again beyond the solar system? That we have them is implied by the fact, once more revealed by science, that every movement, and therefore every 'idle word' of ours, is transmitted across unsounded depths of space, through millions of star-systems, whither and with what result we

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know not. It is not necessary to assume the truth of any present theories of 'telepathy,' or of any mystical scheme of the cosmos, in order to admit that in this sense also nothing in us can presumably be self-contained or isolated.[1]

To answer this question, we must remind ourselves that the 'solar' consciousness, not being immediately necessary to the preservation and reproduction of physical life, is more or less 'vague.' It is the source whence 'glamour' reaches and stimulates the poet and the artist, supplying the aureole or halo of the saint and the illumination of the mystic; but it is also the source of the ordering activities of the reason.[2]

[1] "So long as mere observations were taken, the general opinion that the earth was fixed, and that the sun and stars moved round it, could not be overthrown. It is true that there were many phenomena which made against this belief; but simple observation could not furnish means for the attainment of a better explanation. Then came Copernicus, with the thought: 'Suppose I stand upon the sun!' and henceforth it was the earth that moved, and not the sun; the contradictions of the old theory disappeared, and the new system of the universe had come into being. But it was an experiment that had led to this, though an experiment of thought. Observation still tells us that the earth is fixed, and the sun moving; and if the opposite view is to become clear, we must just repeat the Copernican experiment, and take our stand upon the sun" (Wundt, *Human and Animal Psychology*, 1894, p. 10).

[2] I quite admit that there is only one reason why a solar life should mean advance in quality as well as quantity, and that is, our want of direct knowledge of anything but the measurable in it. Thus it does not yield a sufficient figure or model. But, so far as we know, and in some sense, the destiny of every living thing has been persistently worked for: energetically, untiringly worked for, or else unresistingly waited for. We never find signs that anything struggles against, complains of, is discontented with the 'destiny' of its 'world'; we never find any signs of protest, except in the ignorant individual. You find it in the animal as strenuously endeavouring to escape pain or violent death for the individual or the progeny. But then the race (though it may be, like the horse, in translated form) is safe. The curious thing is that man as man (not as the over-civilised pessimist who is a mental invalid) always postulates ultimate truth and good as the natural right of the world and its conscious and rational product, his Race (whatever form for him this may take); and

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The 'solar' consciousness is thus the true field of what we call the mental and moral energies. 'Heaven,' in fact, represents the fitting goal of all that is best or highest in us; and the very idea of high aims and 'aspirations' shows that after all we have some really valid metaphors. Only, of course, high and low are transcended by the roundness of the world; 'heaven' now is around us, environs us —is below as well as above, without and within alike. The earth is emphatically not the world of the visual. The universe is that; the earth has only evolved the means of transcending its own limits and even its atmosphere, not in body or geographically, but in vision, thought, imagination, and reasoning. The earth's proper sense is touch; it is the distinctive home of the tangible and the palpable; the things of earth are 'within our grasp.' But so they are within the animal's—at least the monkey's!

We must not confound the immature, the half-developed, the partial, with a process or an activity, a movement or a change, complete (*qua* those things) in itself, and as such 'good.' And even with the immature, there is a sense in which the child, as the growth-point of the race, is the perfect of the race, the spring of its 'year.' For in all promise that we know here, promise is better than fulfilment. Why? Because in every sense the presumption is that we are but satellitic, not focal; the fulfilment belongs to our natural Centre, also our natural Origin. How strangely archaic we are when we demand the satisfaction of our ideals here and now, on this plane, in this present form of consciousness and experience, in the mere sense-levels of life! We often wonder why the ineffable promise of spring is never realised

betrays the real existence of this truth and good by the violence of his repulsion from what he sees as false and evil. And this, no matter what the moral type of his ideals may be.

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in summer. Autumn has its own sad beauty; but few admire the monotonous richness of mid-summer as they do spring or autumn, or even winter, the analogue of death. Surely the above reason is obvious.

What then, once more, are our cosmical relations? We can only think them at present as analogous to the inter-cosmic means of communication,[1] in terms of light, of gravitation, of identity in constituent and constitutive energies, and so on. But they are certainly as real and as operative as either the planetary or the solar.

[1] It may here be noted that some confusion is caused by the use of the word 'distance' to express both space or interval which is empty, and space or interval in which there is some kind of medium. You may establish a link and initiate action of some kind between places at a great 'distance' from each other, and yet hold that 'action at a distance'—*i.e.* across an interval void *in every sense*—is impossible. Probably this has something to do with popular confusions on the subject, and illustrates the necessity of laying stress on the *sense* in which 'distance' is used, at all events until we acquire some fresh distinctive term.

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CHAPTER XII

It has already been suggested, and may here be repeated, that our only fully developed articulate world is planetary, which is also satellitic. To adopt, therefore, within the lines already laid down, the comparison between the sense-world and the planetary, the meaning-world and the solar, the world of significance and the visible universe which includes both, let us see how it vindicates itself in working out.

All 'planetary' knowledge is directly acquired either through observation and experiment, or through processes inductive or deductive. We are in full 'touch' with the world we inhabit. 'Solar' knowledge, on the contrary, is one remove from this. We can indirectly explore both our sun and sister planets in a way impossible in the case of the suns which used to be called fixed stars, and the unsounded depths beyond even these. Thus 'cosmical' knowledge is in a sense doubly indirect, as though we needed a third instrument corresponding to the spectroscope to give us the spectra of the stars found recorded on the photographic plate attached to the telescope.

A system of thought may be a means of relation, of interpretation, of emancipation; it may absorb other systems by recognising their validity, and by perceiving its own inadequacy except from a specified point of view or in a specified sense. All systems here formulable are presumably

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planetary; the burden of proof that they are more falls on the thinker. This proof must depend on the predictive as well as on the harmonising and absorbent power of any system. It must win on every side; it must appeal to all healthy instinct and all sound reason; and every year must increase its influence among all men of light and leading whatever their special tendencies may be.

Here then Xenophanes has a lesson for us. Just as he protested against ascribing to Divine being our petty parts and passions, and worse, our shameful ways, and showed that oxen and lions would certainly figure a mere ox-god or lion-god in creed, so we have to protest against the virtual blasphemy of indiscriminate, capricious, and therefore dishonouring use of metaphor gathered from the physical to express the spiritual, or gathered from the spiritual to express the Divine.

Whatever our view of (the whole of) things knowable may be,—whether monistic, dualistic, or pluralistic—whether we are materialist, realist, or idealist,—we are compelled, at least, to speak of the mental and physical as though they were different spheres. And the absence of any recognised criterion of analogy, and therefore of metaphor, the confusion of the equative with the comparative, of both with the illustrative, and of this with the merely rhetorical, tends to confound what may be reflection with what at best may be refraction, or an image of no more value than the baby's picture of a man or the 'signs' of a fabulous zodiac.

Thus, though it has to be said, first, that the three grades or levels of consciousness (and therefore of experience) here suggested as the human heritage are, on the one hand, 'grades' of the physical, and on the other 'grades' of the psychical, such a suggestion must be understood in the sense above indicated. And we may postpone the misused word

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spiritual because (1) it assumes too much; and (2) it embodies obsolete conceptions of nature, though by no means these alone. With this proviso we may repeat that the planetary consciousness is for all practical purposes fully developed. Whether we are aware of it or no, this world is the measure of our ordinary experience and our ordinary ideas, conceptions, and theories. The 'struggle for existence' has secured this. The only reservation here necessary is caused by the extraordinary backwardness of our rational thought of the world, as betrayed, and fostered, by the falsities of civilised language. In ancient days man's thinking accurately followed and corresponded to his physical conceptions; it was everywhere consistent with the current view of the cosmos; with the accredited ideas of matter, of light, of heat, of life, etc. Now everywhere our thinking, as language shows us, is more or less false to the facts which, by the agency of scientific method, we know as we never before knew them.

The 'solar' answers to the scientific activities, made possible by the leisure and protection of civilisation, and stimulated by more and more complex demands upon brain-work. The astrophysicist has become the representative 'solarist'; but he is not content to stop there. He is always exploring and endeavouring to interpret the 'depths' and contents of cosmic space. Thus he also has a lesson for us—one of the utmost significance.

It is a fact curiously overlooked, that whereas Christianity has been condemned on the score of being geocentric, and we are always being reminded how completely the Copernican astronomy discredits the notion of this little earth becoming the centre of Divine attention, modern psychology has taken its place, and works throughout on the assumption that 'mind' does originate on this planet. What if this be

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the reason for the comparative barrenness of its results as yet? What if the assumption—merely for the sake of argument—that 'mind' is essentially derivative, and that its conditions answer to those of light and gravitation and to those of the world on which it is found, should give us a clue hitherto wanting, and go far to explain what seems now simple aberration in the long story of human 'belief' in spirit or in revelation? What if here, as elsewhere, what we need is translation in the widest sense,—the power to master the many dialects of thought, and interpret men to each other by learning their thought-tongues?[1]

So far as we know, the direct (or immediate) conditions of life, as we have them here, are not present in the 'ethereal' world, but only in a kind of 'atmosphere' (light and attraction-world *v.* breath-world). Thus the religious world is first and inevitably 'spiritual.' It belongs to the very 'breath' of our life, and the use of the idea 'spiritual' in the philosophical world is essentially religious. For this is the vital world for man. But then you only need lungs and heart to be fit for mere breathing—the pulse of inspiration

[1] Since writing the above I have been struck by the indirect witness to the validity, or at least usefulness of the appeal to the physical and astronomical status of our home-world, given by Mr. Morris Jastrow in his *Study of Religion* (Contemporary Science Series, 1901). He lays special stress on the apparently universal feeling of man's dependence, "which we cannot get rid of, either by an act of volition or by a process of reasoning" (p. 168). Again, "Man is forced to attach himself to some object regarded as higher than himself, and conceived of as transcendental. His speculations about this object cannot suppress his longing for it, and even though he proves to his satisfaction that the object has no existence outside of his brain, the 'yearning after the Infinite' still haunts his restless spirit" (p. 293). But the use of 'Infinite' is here, as ever in this context, dangerous. Even this careful writer speaks of the perception of the Infinite as "from being faint and indefinite" becoming "more sharply outlined" (p. 280). But of course 'outline' belongs only to the 'finite.' Thus 'cosmical' is the safer term.

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and expiration. Remember that the idea belongs to the organic rhythms. *For a life of mere breath you need not have any special sense at all—least of all sight.* You need neither see, nor hear, nor smell, nor taste, but only feel and breathe. You may be and often are a very inferior animal *qua* animal to those which in depreciation you call brute beasts; your religion may be but a civilised, 'refined,' 'spiritual' animism; and so may be your philosophy, especially if it claims to be 'transcendental' and ultimate. But when mankind begins to live in the royal world of Sight, then at once those who are still in the merely vital world, the world of Breath, the 'spiritual,' are tempted to call him either a mystic or an atheist, and in any case a virulent heretic. Every thinker who shows a tendency to use his vital powers, represented by his breath or spirit, in *seeing* depth and distance; who sees GOD in all truth, and knows that men of all conceivable opinions are custodians of some constituent of truth, and have some lesson to teach us (the 'materialist' as well as the 'spiritualist'); every thinker who knows that 'fact and reality' are not merely what is good in their eyes, but yet more what is true in all true eyes, is liable to be called either fanciful or mischievous. Yet the highest of all religious analogies is found in 'God is light.' Without the Divine light we could not even see God as love.

It is well to remember that our use of 'light' to express intellectual, rational, moral need corresponds to the proposed use of 'solar.' This is not a deliberately chosen figure, it represents an inherent fitness of expression dependent on community of nature. In this sense a really valid 'philosophy,' or mode and scheme of thought, must be 'solar' to us, that is, must belong to what is central to all our energies, and therefore to all our aspirations and ideals, and must answer all our questions as far as we know

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the language of the Answer-world, and are ready to welcome true replies.

In science physical or 'exact' we have this solar quality in a central assumption, such as the theory of gravitation, which is readily owned by all. Variation, of which we cannot have too much, as long as it enriches by distinguishing instead of impoverishing by dividing and excluding, comes in development of the thought-germ. Therefore it is that any system of philosophy which does not appeal to Man as Man when he has attained a philosophical level of intelligence and a scientific criterion of knowledge, is self-convicted, not of being untrue, but of being secondary; of being really only one of many possible solutions of ultimate problems, or at best of being a condition of these. In Significs we are not, therefore, claiming to add one more to the historical systems or methods of thought already existing. Rather does it aim at and indeed imply the assimilation and translation of all modes of arriving at truth—to be a Way which is the interpretation and co-ordination of all ways.[1] It explains and accounts for the widespread desire for universality, and the feeling that this must somehow play an important part not only in securing our recognition, but also in constituting the validity, of any truth under examination. It is in virtue of the secret working of this agency that men

[1] The main characteristic of the present day is the enormous development of the literal Way—of means of locomotion and physical communication; also of means of exploration, examination, analysis; of instrument or apparatus, and of industrial machinery. Is this a translation of a growing but obscure Sense that the idea of the way reveals the secret of our nature? We must, however, beware, on this line of thought, of exaggeration. As there is a well-known Questioning mania, so there may well be a Signific disease, a morbid development of interpretation such as we apparently see in the Bacon-Shakespeare craze. It is too seldom remembered that this danger is always in proportion to the value of any idea and any form of method.

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instinctively suppose that philosophy on the intellectual, and religion on the emotional side, if really worthy of these names, must bring us the significance of all facts given by experience and verified by scientific method—must act as automatic crucibles wherein to test ideas. And it must be borne in mind that the significance is infinitely rich in its aspects, yielding a world of delicate reactions to the complexities of varying mind in races, societies, and individuals. But, as we have already seen, significance must not be confounded with the meaning or intention of acts and events; it is rather their value for us, that which makes them signify for us, that which constitutes their importance, their moment, their consequence for mankind.

Both philosophy and religion, therefore, are absolutely free to vary in presentment to any extent, so long as they remain loyal to certain conditions which are not 'fundamental' (because neither wisdom nor goodness can be 'built' of mere mental stone or brick as *e.g.* systems of notation, of machinery, of law, can), but are rather germinal —the energy of the generative cells of thought and feeling.

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CHAPTER XIII

Of course man must always interpret the Cosmos in terms of his own sense-experience. No other is available. He has no choice but to 'project' his own sense-scheme on to his surroundings. And he cannot directly know, he can only infer what transcends that sense-experience; beginning with perception he conceives, constructs, concludes, 'creates' his world in rational order, which implies its analysis. But having done this the post-Copernican principle begins to tell. The sense-scheme itself is presumably derived like the world on which it is found.

Physiology warns us that even the term 'motor' is dangerous as implying 'spontaneous origination of forces.' "A centre is an organ of return of action, and the type of all motor action is a reflex act."[1] This principle is recognised by all leading physiological workers, *e.g.* by Hitzig, Munk, Bastian, Foster. All action is literally ex-cited—called from beyond; all physiological phenomena are generated, not self-created. The presumption, then, is that we do not originate and then 'project' our highest conceptions; we receive and pass them on, though it may be in woefully childish dialects.

We have to credit the sun with the constituents of the

[1] Dr. A. Waller, "On the Functional Attributes of the Cerebral Cortex," *Brain*, Parts lix. and lx. p. 345.

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earth. But we no longer suppose that these have been bestowed on the sun by the earth. When we say that given gases are in the sun, we are only giving back intellectually what we have received materially. The cosmos and our sun in particular endows us with all our 'gases,' our liquids, our solids, and all our energies.

Once more the presumption is all against the geocentric view that our little satellite is the mental centre of the universe; according to the post-Copernican order the human world cannot be centred on itself. Man is heliotropic, he is beyond that cosmotropic, moving round a moving centre on a way beyond his ken. The primitive mind, much closer than we are to its mother-life in the protozoon, may well have been organically 'conscious' of its ultra-earthly origin,—its nervous system restlessly thrilling with survivals of primordial pulses which have trembled into life upon our cooling planet. The promise and potency of all mind as well as life have lain within the swathes of cosmic cloud, the nebulous embryos of a million worlds. Man is evolved through zoophytes from the interaction of the atomic forces in a nebula. As G. H. Lewes says, "A stream of molecular energy flows through the organism from the great cosmic source, and returns to the ocean whence it came. For the organism is but an unit in the great sum of things. The continuity of Existence admits no break. Our life is a moment in the larger life."[1] How then can we seriously suppose that what we call 'mind' or 'intelligence' is so absolutely independent of 'life' that there is no greater mind to be its cosmos or even its special sun? Yet the same writer can say that "we are the centres to which the intelligible universe converges, from which it radiates," and insist that "the human point of view is in all

[1] *Problems of Life and Mind*, vol. ii. p. 463 (1875).

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respects absolute and final for us."[1] So, with more excuse, said the ancient cosmologists of their tiny world. But science has at least exploded that theory; and as we are in any case confined to analogy, we are bound to keep as long as we can to those furnished not only by astronomy, but also by biology, and especially by that plant-life which so wonderfully grasps and embraces, so to speak, the radiant energy of the sun, and transfigures it into leaf and flower and fruit. John Fiske may well say that here we reach something deeper than poetry.

Two things must, of course, be borne in mind. One, that when we use analogically the physiological processes of vision, we are bound to take the true ones so far as they are known. Thus we have no right to speak of the eye as though it were adjusted to the near, and needed to strain with painful effort to discern the far (as we so often do when contrasting philosophy with science or practical life), but rather as 'focussed to infinity'; while what requires muscular effort is the vision of—the tangible. Another, that not merely do we look through our sense-window at a vast star-peopled universe as real as our own world,—a universe of which the telescope reveals further depths but no limits,—but also that we can devise a mechanical eye (the sensitive plate) which shall 'see' and record a further world of suns and nebulæ beyond even the power of the telescope to reveal to the human eye.[2] That is a triumph of indirect evidence. And after all, as Professor Tait says, "it is to sight that we are

[1] *Ibid.* p. 16.

[2] "The invention of the telescope is to me the most beautiful ever made. Familiarity both in making and in using has only increased my admiration. With the exception of the microphone of the late Professor Hughes, which enabled one to hear otherwise inaudible sounds, sight is the only sense that we have been able to enormously increase in range" (Professor W. H. Perkin's Presidential Address, Brit. Assoc., 1900).

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mainly indebted for our knowledge of external things. All our other senses together, except under very special conditions, do not furnish us with a tithe of the information we gain by a single glance."[1]

This being so, it is very remarkable, he continues, to find how slowly men have reached some even of the simplest facts of optics, and how easily they have believed for ages that objects are rendered visible by something projected from the eye itself. It seems no less curious that even now those of us who claim to represent advanced thought should be tempted to imagine that the mental analogue of 'light' is something projected from the 'mental eye,' or to accept this as the history of our highest ideals. Huxley complained that theologians, having rested the spiritual world "on the elephant of Biblical infallibility, and furnished the elephant with standing ground on the tortoise of 'antiquity,' they, like their famous Hindoo analogue, have been content to look no farther; and have thereby been spared the horror of discovering that the tortoise rests on a grievously fragile construction."[2] Nothing could better express the contrast which we are considering. The 'tortoise' would not really have even a fragile construction to rest on. We are inexorably compelled to postulate something much more to the purpose than any 'standing ground' for anything which is rightly called a 'world.' The true analogue here is the ether of the modern physicist, in which we find no immutable base or immovable foundation, or even impregnable 'rock' to fix our 'worlds' upon, but across which we get our messages or 'revelations' of light and electricity and gravitation—and life.

Neither morality nor anything else can be 'based' on the

[1] "Light," *Encyc. Brit.*, 9th edit.

[2] *Essays on Controverted Questions*, p. 27 (1892).

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idea of a solid rock-in-itself fixed beneath the cosmos or even below the world. True that the 'ether' is as yet hypothetical, and cannot be made to fit all the facts which need to be accounted for. But how is it that our little world goes on its way so steadily and securely without a vestige of what we usually mean by support? Undermine all the 'foundations' of our mental world, and even if the result, as the agnostic tells us, 'is painfully like nothing,' it is all the 'support' we can have, and seems to answer very well. And if we are wisely warned against 'soaring' into it, at least the very sense of sight calls us to see into it and make inferences—to find in the messages of the astronomer no fanciful dream, but verifiable and predictive records of fact. Of course, as Sir Leslie Stephen says, popular instinct protests that "this planet is the universe; never mind the stars."[1] And as he sees, the mass of mankind still believes that the sun goes round the earth. It is here, then, that we may look for the real cause of our demand for fixed bases in our mental world, where they are no more possible than in the case of the planets, the sun, or the stars. The metaphor is, of course, valid up to a certain point. Man himself needs no foundation, but must have solid ground to walk and build upon. Only we must remember that all such foundation is in its turn unfounded. This is an idea absolutely vital to clear thought. And this is where the mischief of Ptolemaic thinking is betrayed; the fatal mistake of supposing that the 'sun' of a true moral ideal goes round the 'earth' of our satellitic instincts and impulses.

It is a familiar fact that Aristotle's marvellous insight—so predictive in some directions—was entirely led astray by the geocentric bias. His false cosmography and false physics were linked to his metaphysics, and were to play a

[1] *An Agnostic's Apology*, p. 324 (1893).

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large part in the discredit into which all metaphysics have since fallen. But he, at least, had an excuse which cannot be allowed to von Hartmann, when he tells us that "beyond that which is the Substrate of everything Existing no Philosophy can go. Here we stand at the inherently insoluble *problem of problems*. The earth rests on the elephant, the elephant stands on the tortoise, and the tortoise?"[1]

Well, if an ultimate base were either needed or possible, the question would concern us; as it is, the appeal is simply unmeaning. And it is one made on every side, to the confusion of ethical as well as philosophical thought. Truly we want not merely another Copernicus, but another Bruno. For even Copernicus imagined an immovable centre of the universe in the sun, whereas Bruno placed it in sun after sun, "even in the outermost parts of the universe and in infinity," and exclaims, "Let the earth eschew privilege; let her fulfil her course and obey. Let not this contemplation dispirit man, as if he thought himself abandoned by GOD; for in extending and enlarging the universe he is himself elevated beyond measure, and his intelligence is no longer deprived of breathing space beneath a sky meagre, narrow, and ill-contrived. . . . Dwellers in a star, are we not comprehended within the celestial plains, and established in the very precincts of heaven?"[2] Yes, here we reap the harvest of at least a comparatively true analogy.

J. S. Mill proposes to "think away the support, and suppose the phenomena to remain and to be held together in the same groups or series by some other agency, or without any agency but an internal law"; and urges that "every consequence follows without substance for the sake of

[1] *Philosophy of the Unconscious*, vol. iii. p. 196 (1884).
[2] Frith's *Life of Giordano Bruno*, pp. 45, 46 (1887).

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which substance was assumed."[1] So, of course, with the 'basis' which we fancy to be so indispensable. "The Hindoos," remarks Mill, "thought that the earth required to be supported by an elephant; but the earth turned out quite capable of supporting itself and hanging 'self-balanced' on its own centre."[2] Perhaps, rather, it found itself capable of revolving on a cosmically attracted centre, on an orbit, the result of co-operative forces. So it may be with primary ideas or convictions which certainly cannot boast of any elephant or tortoise to uphold them, and therefore run the risk of being condemned as necessarily 'unfounded,' which is exactly what, if true, they must be.

[1] *Examination of Sir W. Hamilton's Philosophy*, p. 252 (1872).
[2] *Ibid.*

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CHAPTER XIV

FROM this point of view we may re-examine the Positivist appeal "to submit our consciences to the oldest religion known to this planet."[1] But so long as we confine ourselves to life or mind on this planet, the oldest ideas are the youngest,—the most infantile. Thus we should be submitting the adult to the standard of the infant, as though we were to give up talking and even walking, and resume our place in the cradle and on the nurse's knee. And however true it may be that we have much to learn, *e.g.* in psychology, from the 'little child' now with us; however likely that our most remote ancestors were more fully 'in touch with nature' than the descendants who, losing instinct, had not gained the power of inductive reasoning, we have no right to sacrifice the fruit of man's long travail and relapse into the childish primitive cults.

For when Comte is described as 'unearthing' or 'excavating' for us "the real religion, ample in itself without supernatural and superterrestrial ideas about religion," this is using a Ptolemaic analogy and making earth central. With a revised cosmology the idea falls. Natural science knows nothing of our planet as an ultimate centre. Even where any given phenomena cannot be traced by our present methods beyond our little satellite or its in-

[1] "The Emancipation of Women," F. Harrison, *Fortnightly Review*, October 1891.

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habitants, we are not, therefore, free to reckon our earth as the original seat of any known energies or activities. It is sometimes urged, in pre-Copernican metaphor, that "all we need is to clear human nature from the clouds." But in fact the metaphor, as usual, betrays its user. For we cannot clear our planet from the clouds which belong to its natural atmosphere and are essential to its fertility. Nor can we abolish by simply shutting our eyes to them the sun, the moon, the stars, nay, the light and the infinite blue of the heavens. To other eyes, still open, they are there all the same.

We are compelled to speak in cosmological figure. Let us see, then, that our moral cosmology does not stand or fall with the idea of a fixed and central earth, surrounded by projected or at least tributary 'heavens,' and reflecting light from itself upon its skies. Either natural phenomena have no bearing on the questions called religious or ethical, or they have a bearing which compels us to revise our mode of conceiving and expressing the latter, where this may traverse what we know—however little—of the order of the actual universe.

For these reactionary appeals to centre ourselves upon the earth are found far beyond the limits of professed Positivism, and they cannot fail to affect our views of the origin of human conceptions and conduct, more than we have perhaps suspected. After all, there is a valuable truth in the Positivist exhortation. The really primitive mind may well have been (in an organic and pre-logical sense) more in touch with nature than we think. For once more, what right have we to speak as though we knew that life and mind have originated on a globe which we now know to be satellitic and subordinate to a moving centre, itself one of millions in an unexplored universe? At least

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the presumption is all the other way, and the burden of proof rests with the man who admits (for instance) an 'ultra' of vibration at each end of the narrow human slit of spectrum and the narrower one of sound-compass, and yet supposes that somehow this strictly derived little planet had once contrived to originate so stupendous a thing as life with its yet more marvellous 'consciousness' and 'intelligence,' and that man's narrow slit of vital and mental spectrum includes its whole range.

Kant called himself a Copernicus of mind. He claimed that his thought reversed the starting-point then accepted in philosophy, and began at the other end. But that reversal seems to need now a wider, less abstruse, more practical application than his. If 'mind' must still be mystery, let it at least be cosmically derived mystery, with light and heat, and ether and gravitation, until we have some real right to claim it as the unique privilege of earth. There may well be in the mental world as in the physical, (so clearly exemplified in the physiology of plants,) two complementary tendencies, of which the one ought to be included in the other. One would be 'geotropic'; the mind would be drawn towards and centred upon this earth and its concerns: the heavens would then exist merely for the sake of the earth:—

> The strong base and building of my love
> Is as the very centre of the earth,
> Drawing all things to it.

The other would be 'cosmotropic'; would be always reaching out into the surrounding greatness, vague though its limits were and beyond the tactual range. Touch would represent the first; sight the second, reading messages of light, and revealing a mine of untouched treasure.

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The geotropic—so far as it professed to be a complete and sufficient answer to the questionings of man—would either ignore entirely a 'spiritual' world, or would fix it in the clouds, and make it an offshoot of this actual world, the only 'real' one we know. It would inevitably imply anthropomorphism. Man would make his 'god' in his 'image.' The cosmotropic, on the other hand, would suppose all which belongs to this earth—including the aspiration of man—to be given and recalled from beyond, whether from the boundless universe or from its particular sun. Visible or invisible, energy or power of every kind and in every sense would have an ultra-earthly source. Man's true GOD would 'make man,' not merely in His image, which might be but a dead picture or a doll, an imitation of the living being, but in the Divine Energy: God would generate him as a father does a son—whatever we were to understand by such metaphors. Man would know at least that he was not self-centred. For we are very much derived indeed,—more than even second hand,—we are perhaps but a by-product in the vast cosmical process of world-growth. What then follows? That we must, in decent consistency, give up the presumption that our tiny speck in a third-rate system has been or is the original centre of any class of phenomena found upon it. Else the psychical becomes miraculous in the worst—the magical—sense of that word. And at least through all his wildest aberrations, man has retained in almost every form of religion the sense of dependence on powers beyond the world; from the first he has conceived his objects of worship as somehow 'above' himself.

The question in the last resort is always, Does the earth reflect the sun's light, or the sun reflect the earth's? The

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idea of a 'GOD man,' a being absorbing and giving out the energies of a greater centre, and beyond that of an infinite treasure, of life, at least answers to the first. The idea of man as his own ultimate god, and his religious conceptions as merely magnified reflections of himself, belongs to the second. Which is the more likely to be true?

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CHAPTER XV

If now we turn once more to a writer who cannot be accused of a leaning towards speculative mysticism or dogmatism, we shall find Sir Leslie Stephen warning us emphatically that we cannot have a world complete in itself and "limited in every direction," or "lay down definite bounds to the labour of investigation"[1] at the horizon of our own world, under the supposed common-sense notion that we are concerned with nothing else. We are all in the end driven to confess that physical facts depend wholly on sense-experience for coming within our ken at all. For this our senses are the means and medium. But senses are inherently means of message, and 'message' is meaningless unless it involves the idea 'from somewhat to somewhat,' just as 'link' must needs be between two somewhats.

We have the term 'eject' as well as 'object'; but we seem also to need the term 'inject,' and to conceive our highest ideals in physiological analogy rather as 'injected' than as 'secreted.' When it is claimed that religion is a stimulus which impels the response of recognition, the analogy is that of food which reaches us, be it noted, not as secreted within the limits of the organism, but as 'injected' into the digestive canal and absorbed through its

[1] *An Agnostic's Apology*, p. 324 (1893).

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walls into the system. And our main physical needs—air, food, light, warmth—come to us as 'first principles' from 'without' the organism—in this sense as much beyond the race as beyond the individual. We do not elaborate them from our own tissues. Thus we are not ultimate arbiters of our own destiny, because we are determined by what is greater than our 'geotropic' selves. Discount analogy as severely as we may,—and few of those current will stand any test,—in so far as we use it at all it must make all the difference whether we take fact or fiction as our source of comparison.

Perhaps what suffers most from this inherited bias is the problem of suffering or pain itself. No one could deny how much suffering and pain increase in bitterness and horror so long as we look at them with reference to this world alone, seeing in the instinct of appeal to 'another world' for the solution of the problem only a survival of 'baseless' mythologies.

"Our sweetest songs are those which tell of saddest thought."[1] This strikes a true note, an unused clue, hidden in a seeming paradox; for one question of deep significance seems here to suggest itself. In the organic world injuries, deformities, mutilations, and pain in every form, only tend in some sense to deterioration if not total destruction of the organism.[2] How is it, then, that the very miseries and sorrows, to express which at all we have to use these physical analogies, may yet raise man in a true scale of being and even ennoble him—performing for him the inestimable service of "bringing him nearer to his kind"

[1] Quoted in *An Agnostic's Apology*, p. 36.

[2] The phenomena of compensation have of course to be considered here. But they do not seem to affect the general conclusion, taken in the broadest sense.

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and fitting him to play a worthier part in life?[1] We see this apparent paradox, thank GOD, on every side; we see that those who are spared suffering can know but a poorer love, and live but on a lower level as compared with those who know its pangs and cruel aching. But does it not suggest that suffering has some real relation or reference of some actual kind to a greater life than that either of the individual or the race on this small planet? The view that confines the problem of pain to solutions on this world and in this life is, in fact, founded on a false analogy and is essentially Ptolemaic. Let us, at least, use by preference the only one now scientifically permissible, and see that if there be a 'solar system' of moral ideal, suffering may be the very sign that we are in training for a greater and higher form of life within it. Indeed, the very passion of our protest against the agony and injustice of the world may well be due to that higher life stimulating us to the Divine discontent which alone can make for such development and bring us the true answer. Truly, as Mr. Francis Galton finely says, we need "a vigorous resolve to use all the intelligence and perseverance we can command to fulfil our part as members of one great family that strives as a whole towards a fuller and a higher life. . . . We must look on the slow progress of the order of evolution, and the system of routine by which it has thus far advanced, as due to antecedents and to inherent conditions of which we have not as yet the slightest conception. . . . In our doubt as to the character of our mysterious relations with the unseen ocean of actual and potential life by which we are surrounded, the generally accepted fact of the solidarity of the universe—that is, of the intimate connections between distant parts that bind it together as a whole—justifies us, I think, in looking

[1] *An Agnostic's Apology*, p. 112.

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upon ourselves as members of a vast system which in one of its aspects resembles a cosmic republic."[1] In truth the repudiation by science of all claim to deal with 'causes' or 'impelling forces' engenders the suspicion that in one sense the position of science answers to that of the pre-human animal. The scientific intelligence seeks for the What and the How, but stops short of that Why which is the special human acquisition. For the demand for a reason, a be-cause, is, as we see in very early days of normal childhood, exactly the difference between 'lower animal' and 'man.' From this point of view the scientific type of mental activity is strictly agnostic, as corresponding to that of the bee or the ant, the sphex or the spider. Ask these or their like the questions which, while they are vital to man, are not to be asked of science; and even if we endow them, for the purpose, with language, they cannot answer or tell us Why they act thus or what impels them. Science is in this on the same level, and shares their impotence. But it need hardly be said that this is not to undervalue her work.[2]

The Copernican reversal, while reducing our little world to its dependent status, does not imply disbelief in the potencies of the planet. On the contrary, the more clearly we realise the stupendous mine of energies, perceived or inferred, which our tiny earth has for her illimitable quarry and treasure-house, the higher must be our hopes for the flower of her products, the consummation of her generative activities. She may have 'mothered' Man; but it is no case of 'parthenogenesis'; he has nothing less than the vast universe to 'father' him.

There are two conceptions of man, as there are two

[1] *Human Faculty* (1883), pp. 298, 302, 333.

[2] See above, p. 96.

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conceptions of the world on which he lives and to which he belongs; between these two in some sense or other, and whether consciously or no, we all have to choose. May we not sum up the alternative thus?—

(1) Man, as his own centre, fixed and firm, or revolving round his self-axis; man as the last product of finished self-evolution.

Man as throwing off, after originating, heat to warm self by, light to guide self by (in the form of accumulated experience).

Man as projecting his own poetic fancies,—what he calls the suns and stars, comets and meteors, into what he calls the sky.

Man as ultimately a core of solid physical reality upon which you can 'take your stand'—a dense entity which you can feel, touch, measure, weigh; man with a star-studded mind-sky belonging to him as evolved by him, and a sun going round him as well as a moon,—all ultimately products of his fertile imagination and his busy logic.

This is Ptolemaic, or at least pre-Copernican.

(2) Man as the offspring and dependent of a greater, nobler, fuller, stronger, and more energetic centre round which he revolves—that centre revolving also, and drawing him onwards with it on a yet mysterious journey.

Man as derivative in everything—as living and moving and having his being by the energising cosmic forces; man as related through consciousness, and (beyond that) through what he calls mind and soul and spirit, to a boundless universe which, atomic as he is, he can at least 'perceive,' recognising his familiar home-stuffs in remoteness else inscrutable.

Man as instinctively expressing this 'mind,' 'soul,' 'spirit' in terms of 'sight,' responding to 'light'; in terms

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of attraction and repulsion, responding to 'gravity.' For he is moved to act by impulse which transcends him, and therein lie his natural ideals.

Man as knowing that his so-called 'emotion' and 'intellect,' 'will' and 'conscience,' and all else that is his, are gifts from a greater source, messages from a higher greatness, beams radiated from a nobler sphere, waves running in from a deeper sea of being: such waves, beams, messages, gifts, summed up in 'revelation' and 'inspiration' whether in a theological or a general sense, and conceived as generative energy shining upon and pressing into him, and bringing forth the being born to aspire as the plant grows upwards.

Man using the atmosphere which enfolds him and makes breathing possible, for bringing forth innumerable Life—knowing that the life shall grow till Mind is born at last; making the living units kin, through Man their world, with a cosmos of which suns, if not whole sun-systems, are the seeds and the germs. These are his truest metaphors.

This is Copernican.

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CHAPTER XVI

YET it may be said that we have no right to the assumption just made that consciousness and mind are included in the Copernican reversal, because we have no direct perceptual evidence of their existence past or present 'beyond the world' in space. *But neither have we direct perceptual evidence of their promise in the earliest forms of animal life*, In both cases we are reduced to the conceptual.

'Infinity' by negativing the less implies the more, but never gives us the most. Its use is that it thinks away space, as the use of 'eternity' is that it thinks away time. Only, alas! we generally use both terms as a sort of overflow or extra of space and time—a further away and a further off, or a greater amount of the same entity. But thinking away, ruling out (if we merely abstract), leaves us with No Thing, and more, with Nowhat and therefore with Nowhy. And this applies to all words beginning with 'ab'; the use of the 'absolute' to symbolise the fullest of realities is itself an 'unresolved' contradiction.[1] Significance, on the other hand, is the gathering, the concentrating into its focus of

[1] It is curious how much more consistent we are in the use of prefixes like 'ad' or 'ap' (and in other like cases), than in that of 'ab,' *e.g.* to ad-here, ad-join, ad-vocate; to ap-point, ap-portion, the ap-posite, ap-petition, etc., all belong to the same category. And yet consistency in the use of terms which claim (even in protest) to deal with the most ultimate of human ideas seems especially imperative.

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radiation; it is in a deep and predictive sense the assimilating, the life-generating, the life-crowning term.

All systems also inevitably concentrate in Significance as their essential value as well as test. And thus Significs alone gives us the power of inter-translation. As Giordano Bruno truly says, "Certitude is only acquired by a kind of comparison, by conferring (in its true sense) one sensible object or one sense with another."[1] This is true in a richer sense even than he intended. What you say is true: (1) in one sense; (2) in many senses; (3) in all but one sense; (4) in all senses; (5) in no sense (*i.e.* is nonsense or is false). "For the same Truth may be in different subjects . . . and given us through diverse senses," in both senses of that term.

What is truth? "All this may be very accurate, very exact, very precise; but it is not true." In what sense? Or "All this may be very inaccurate, very inexact, very vague, but it is true." In what sense? In the first case the given statement may rest on a suppressed premiss which is fallacious or erroneous. Or it may be dishonestly put forward as a complete statement, whereas it depends for its truth on some complementary factor which supplies a given character and meaning. In the second case, realities, verities, actual facts may be set forth pictorially, even hyperbolically where the receiving mind needs it, so as to call out response. Or they may be given in action, being lived or acted in outward conduct, thus impressing present spectators, hearers, touchers, with the sensuous conviction of their reality. The test in the first place is mechanical; it is applied in the laboratory, or (mathematically or logically) in formal analysis. In the second it is tested by result; not result of insentient process, but

[1] Toland's Essays, etc. (1726), pp. 319-20.

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result on a living mind. In the first case we have the insincere and unveracious; result, false impression and inference. In the second we have sincerity and veracity; result, valid impression and inference, albeit possibly vague or general. The first may be accurate, but the second is true—a very different thing. Here also, surely, we have the difference between knowledge about and knowledge of; between mechanically correct information and intimate appreciation. The first is laborious and lifeless; we see only too much of it in the threshing and rethreshing of old straw in the literary world: the second is spontaneous and vitally penetrative, piercing as by an arrow of light to the core of the matter; to what really signifies and avails.[1]

To return to the analogy between physical and mental vision: if we test it by result upon thought there is perhaps no truer metaphor in language than that of the mental and especially the intellectual 'eye.' The simplest and most ignorant of us says 'I see,' meaning 'I understand'; and the

[1] A good practical description of the dead or as it might be termed dessicated knowledge turned out by the present school system may be found in Prof. Dewar's Presidential Address to the Brit. Assoc. at Belfast, 1902. "It is in the abundance of men of ordinary plodding ability, thoroughly trained and methodically directed, that Germany at present has so commanding an advantage. There are plenty of chemists turned out, even by our Universities, who would be of no use to Bayer and Co. They are chock full of formulæ, they can recite theories, and they know text-books by heart; but put them to solve a new problem, freshly arisen in the laboratory, and you will find that their learning is all dead. It has not become a vital part of their mental equipment, and they are floored by the first emergence of the unexpected. The men who escape this mental barrenness are men who were somehow or other taught to think long before they went to the University. To my mind, the really appalling thing is not that the Germans have seized this or the other industry, or even that they may have seized upon a dozen industries. It is that the German population has reached a point of general training and specialised equipment which it will take us two generations of hard and intelligently directed educational work to attain."

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man of science as well as the philosopher has nothing better to say. For the physical eye forms actually part of the brain, which everybody admits to be the condition of what we call 'thought.' The processes and functions of the brain are thus inevitably taken to symbolise the processes and functions of rational thinking. Whether they do correspond point for point or no, we are impelled by a constraining force, apparently felt by the whole race, to express the one in terms of the other. The mischief is that this is done with a fatal inconsistency. For example, whereas the mental eye is constantly credited even in philosophical writing with the power to 'see itself' directly, the physical eye which is seen in others cannot, except in a mirror, be seen by itself: we can only explore our own eye by means of touch.

But if we seriously appeal in this case to the physical analogy, let us ask what the oculist means when he tells a patient that, so far as physiological conditions are concerned, he sees true, his vision is 'emmetropic,' normal, sound. What by this does he intend us to infer? That the trouble which is complained of arises from disturbance of general health, since he finds the mechanism and tissues of the eye healthy, the focus and accommodation normal, and the two eyes acting together.

Now the corresponding mental trouble may in the same way be due, not to disturbance or failure of normal function in the mental 'eye' itself, but to disturbance of the general mental or intellectual health. But it is well known that in the physical sphere defective eyesight tends injuriously to affect general health in various ways. Unless therefore we consistently decline to use the analogy of vision at all in speaking of intellectual and moral phenomena—which is impossible—we must assume the falsity of the accepted

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'view' that the near and the palpable is what we can 'see' with least effort, while the remote, that which transcends our grasp, and indeed all our senses except that of sight, is what costs us the greatest mental exertion. For if we are true to our analogy in the only sense which justifies it at all, it follows, as we have already seen, that "in what may be regarded as the normal eye," normal mentally as well as physically speaking, "the far limit" (of accommodation) "may be put for practical purposes at an infinite distance." We are conscious of a distinct effort in turning from a far to a near object, while the converse act is an easing, a relaxation of effort.[1] But which of us has practically recognised this fact when modes of thought or philosophical principles were in question? These are always spoken of as dealing with things 'transcendental'; by which the 'plain man' means beyond his reach, beyond the limits of what he unconsciously admits to be merely the tangible or the palpable, which is the range of the tentacle and in us of the arm. Thus he is accusing himself of mental blindness: *for to see what is beyond our physical reach is precisely the function of the eye.* But which of us really understands that normal mental vision must needs deal most easily, not with the near or the close by, but with the far and the remote: which of us has applied this pregnant idea in interpreting experience? Which of us fully faces the fact that the seer who boasts of the narrow limits of his mental outlook, and decries as dreaming or idle star-gazing the natural activity of the mental eye, is radically false to fact or is really boasting of a distortion of mental vision which must vitiate all his inferences? Which of us has fully realised the fact that we must not, if we use it at all, violate the analogy and falsify the metaphor by

[1] *Text-book of Physiology*, Dr. M. Foster, vol. iv. (1891), pp. 1154-55.

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thinking of one 'mental eye' merely, but under normal conditions must appeal to both eyes in combination? And even so, which of us remembers that the two must not be set one on each side of a head, with a snout—a projecting barrier—between them?[1] In short, which of us realises that we are wholly dependent for our very ideas of mental phenomena on a ludicrous travesty of the facts of organic vision, and that the inevitable issue of this is disastrous psychological confusion reflected in all philosophical theory as well as in the plain man's common-sense 'views'?

Professor Karl Pearson insists that in consequence of the fetishistic use of the terms matter, mass, motion, force, space, time, cause, atom, body, law, etc. (especially in text-books), physical science has made a false start. But the biologist, the physiologist, the psychologist, have all been dependent on such terms in this untenable and misleading sense, since no others were current. So they have everywhere used them both directly and figuratively. Thus if Professor Pearson maintains his position even in the broadest sense, psychology and ethics have so far made a false start too Their premisses are liable to vanish with the superannuated connotations of the main terms of physical science. At all events if (as in the case of alchemy and chemistry, astrology and astronomy) the modern scientist is compelled to use the old terms, they must be carefully charged with new meanings, for in too many cases the popular mind is steeped in the logic of magic and yet never suspects it. Perhaps the securest stronghold of myth is the mind which, in the name of common-sense, refuses to question its own

[1] "In some of the lower animals the position of the eyes is so completely lateral that no rays of light proceeding from the same object can fall on any part of the two retinas at the same time, and in these creatures vision is wholly monocular" (*Text-book of Physiology*, Dr. M. Foster, vol. iv. (1891), p. 1275).

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certainties. For it is almost invariably unconscious of the extent to which its common-sense has been distorted by the action of our essentially defective system of ideas, revealed as well as reinforced by deformity of figurative expression.

Take again the rods and cones, the receivers of light. The accepted view in analogical use is that if you want to be enlightened you must not ask 'light' to come in and reach you (from 'behind') at the point of some mental organ turned inwards. That would be fatal 'introspection,' we say, and a sad waste of time; we must turn the point of our mental eye-organ outwards if any light is to be thrown thereby upon any subject. And so on throughout our thinking. We are always appealing to facts to furnish us with illustrations. But if we appeal to a mere fancy and treat it as a fact,—if we seriously take the centaur as we take the 'horse' and the 'man,' and use its supposed movements as the analogues of something actual which we want to illustrate, arguing from the one to the other, as though a 'man-horse' were a 'fact' in 'nature,'—then, of course, we re-import into our reasoning the very fallacies which are everywhere else discredited. If we appeal to a centaur at all it must be as a fabulous monstrosity used to illustrate something also monstrous. But we too often use mythical 'facts' belonging to the same order as the centaur, or satyr, or dragon, or phœnix whereby to express the reasonable, the congruous, the orderly, the real; for instance, matter, force, spirit, cause, etc., in their popular or inherited sense. They create fictitious difficulties, and these of course react on the emotional sphere and generate pessimism.

Many attempts have been made to establish special analogies between the facts or laws of the physical world and those of the social, moral, or intellectual world. The

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misfortune is that all these have been made in the interest of some special view or theory of the world of 'soul' or 'mind,' some special form of idealism or spiritualism, of ethical or social system, or indeed simply of 'belief.' And the consequence has been that the comparisons made would not bear strict examination; there has always been a tendency to ignore or to overpress points which told against or for the desired conclusion. Analogy has been treated too much as though it were an advocate to be secured by a retaining fee, and safe to put a certain case as strongly as possible in a certain way. But, of course, as J. S. Mill truly says,[1] "there is no word, however, which is used more loosely, or in a greater variety of senses, than Analogy." And it ought to be obvious, as he further tells us, that the value of a true analogy is that of a guide-post "pointing out the direction in which more rigorous investigations should be prosecuted."

But there is a method both of discovering, testing, and using analogy (or in some cases homology), the value of which does not yet seem to be recognised; and this may be called in an extended sense Translation.[2] While

[1] *System of Logic*, pp. 364, 368 (1895).

[2] It must be borne in mind that although the term 'translation' has been chosen because it is already used in at least part of the sense here suggested, it does not cover the whole ground required. Many words with the prefix 'trans' represent one aspect of the process in question, *e.g.* transference, transformation, transmutation, transfiguration, and, above all, transvaluation.

Reference may here be made to a profoundly significant article by Mr. A. B. Kempe on "The Subject-Matter of Exact Thought," in *Nature*, December 18, 1890. The pregnancy and suggestive force of the whole essay make quotation difficult, but the following may serve as example: "The essential elements of the subject-matter of exact thought are in reality of an extremely simple character; and, though they exhibit infinite variety, that variety is due to simple and easily-defined causes. There is nothing vague or metaphysical about them; but, even when mere figments

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emphasising and illustrating what R. L. Nettleship called the apparently ultimate fact that "all language and all expression is a form of *translation*,"[1] Significs claims to extend and develop the application of that idea in practical directions. We already find that it is not by endeavouring to kill deep-seated tendencies of human nature but by translating them into a higher form, that we achieve the regeneration of man. Adulation turns into reverence, license into orderly freedom. Even 'gambling,' which thus turns into 'venture' and 'daring an issue,' is undermined by translation, and becomes the boast of the ex-

of the brain, they are precise and definite, with parts and properties which can be analysed and catalogued just as much as if they were the elements of a chemical compound, the wheels of a watch, or the organs of a vital structure. Let me try to show that this is so. I will begin by considering and comparing the essential matter of two 'branches of science,' which will, I think, be regarded by most persons as of quite different characters, and as very properly relegated to separate and distinct treatises. I refer to the geometrical theory of points, and the logical theory of statements. The investigation will, I hope, fully prepare the way for an acceptance of the general definition of the subject-matter of exact thought which will follow."

This admirably expresses one of the main forms which translation may take.

[1] *Philosophical Lectures and Remains*, vol. i. p. 86 (1897).

This is very obvious in the case of the infant. "There is no device of words that can evade or supersede the ultimate recourse to things. Now the significations of words are learned in most cases not so much by definitions and verbal descriptions as by *the observation of the various applications of the words*. Indeed, this is the primitive way in which the meanings of words are found out. The child knows nothing of what, say, the word *horse* means until someone shows it an actual horse, and, maybe pointing to it, says repeatedly, *horse*, in such a way as to excite the observation of the child to the intended application of the word to the thing" (Francis C. Russell, *Monist*, January 1893, p. 279). Indeed, it begins even earlier. The little one becomes accustomed to the sound of the word 'milk' or 'bottle' in the nurse's mouth when it is looking for or enjoying its meal, and soon translates the one experience into the other.

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plorer; even the fighting and drinking tendencies may be transfigured as we get to the sound impulses which they distort and degrade. The translation of the first is already seen in war in the form of devoted gallantry. The second is due to the craving for an enhanced sense of life and power and delight which appears thus to be gratified; the morbid and deadly satisfaction could at least, in many cases, be replaced by a healthy one, and in any case points to a true need. The mere attempt to state one subject in the terms of another, to express one set of ideas in those words which seem to belong properly to another, changing only the leading terms, could not fail, if done systematically and critically, both to enlighten us on points of connection or correspondence which have not been suspected,[1] and also, perhaps, to reveal ignorance in some cases where we have taken knowledge for granted. It would automatically sift the superficial or partial from the deep or complex likeness; and it would lead to the recognition of a wide difference between the casual, the merely illustrative analogy, and that which indicated inter-relations not yet recognised and utilised.[2]

[1] A striking case of this in physical science is the 'singing flame.' And it appears that, "extravagant as the suggestion may have seemed" when Professor Ayrton first made it, an electric arc has actually started playing tunes in one laboratory, and succeeded in evoking a sort of chorus in others, to the astonishment of the physicists working in them. Thus the time is perhaps not far distant when the arc will "compete as a musical instrument with the violin or grand organ," and "we shall be able to realise something of the grandeur of 'the morning stars singing together.'" ("Musical Arcs," *Nature*, April 4, 1901).

This is indeed a startling case of natural and practical 'translation.'

[2] A good scientific example of this occurs in an address to workingmen by Sir Norman Lockyer. "The next point is that the astronomical record, studied from the evolution point of view, is in other ways on all-fours with the geological record. We get the same changes of forms, I may say that we get the sudden breaks in forms, disappearances of old

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One example of the various forms in which translation in this new sense becomes a means both of testing knowledge and of widening its range is here given. To give others would increase the bulk of the book too much. In this case 'translation' consists of openly borrowing the statement by some master of thought and word, of a given thesis, and applying this with some necessary changes to another. Whether this involves the incongruous or falsifies argument, or whether it fits, it will prove equally useful as a 'signific' exercise.

accompanied by appearances of new forms, and with this we get, whether we consider the atomic weight point of view or the series point of view, a growth of complexity. The geological story is exactly reproduced" (*Nature*, June 1, 1899). Again, the very title of a leading article in *Nature* (November 21, 1901) involves the principle of translation: "Zoological Problems studied by a Psychologist, Psychological Problems studied by a Zoologist."

In an article on "The Light-Sensations of Eyeless Animals" (*Natural Science*, March 1897) we find the following: "Distinct vision of the external world would result as soon as there were a sufficient number of the sensory cells to give a connected translation of the image with its various lights and shades into sensation."

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CHAPTER XVII

IT is necessary to explain that the following translation of parts of Dr. Hughlings Jackson's Lecture on the Nervous System (1884) was the result of a friendly challenge by the late Professor Croom Robertson to obtain for such an attempt the endorsement of the experts in any subject.

Although no one knows better than the writer how defective it is, the example here given had the honour to meet with a warm acceptance and welcome not only from Sir J. Crichton-Browne, Dr. Mercier, and other alienists and medical authorities, but from Dr. Hughlings Jackson himself.[1]

'TRANSLATION' OF PARTS OF DR. HUGHLINGS JACKSON'S CROONIAN LECTURE ON THE NERVOUS SYSTEM (1884)[2]

Regarding the spiritual system as that part of us related most nearly and fully to a postulated mental sphere, 'solar' to us, *let us consider diseases of its functions as reversals of evolution, that is, as dissolutions—looking upon evolution* in the mental and spiritual (as in the physical) region *as an ascending development in a particular order.*

[1] I should be willing to show to any one interested the terms in which, by letter, this acceptance was couched.

[2] Verbal quotations from the Lecture are printed in italics; the rest is translative application. It will be seen that in this instance the translation is from what Mr. Rutgers Marshall would call the 'neurergic' to the 'spiritual' sphere (*Mind*, October 1902, p. 479).

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Such a development is (1) *a passage from the most to the least organised;* (2) *from the most simple to the most complex;* (3) *from the most automatic to the most voluntary. The triple conclusion, therefore, from this is, that the highest* (mental) *centres are the least organised, the most complex, and the most voluntary.* They are, in fact, always prophetic. *There is no inconsistency whatever in speaking of mental centres being at the same time the most complex and least organised. Dissolution being partial, the condition in every case of it is duplex —negative and positive. To undergo* (mental) *dissolution is equivalent to being reduced to a lower level of* (mental) *evolution. Normal thought and conduct are, or signify, survivals of the fittest states of what we may call the topmost 'layer' of the highest* (mental) *centres. The illusions of the fanatic,* or of the morbid mystic and the superstitious devotee, *are not caused by* (spiritual) *disease, but are the outcome of the activity of what is left of him* in the highest sense; *of all there is of him; his illusions, etc.,* are his faith and his theology (or his spiritualism) at the time of their prevailing. Thus the various 'isms' claiming at present to be 'spiritual,' and to be revelations of the spiritual or heavenly world, may well be witnesses, not merely of decay, but of something to decay; something belonging to the very crown and glory of our nature, to which they point and from which they spring, but which has lost for the time its royal power of rule and sway and co-ordination, whatever the reason for this may be. And of course the disordered presentation of these activities—now illusory—tends to discredit that whole sphere of mental action which we call religious. Superficial observers are apt to confound the symptoms of spiritual insanity with symptoms which really imply and point to spiritual wholeness.

The highest centres of men's mental and moral activity

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being least organised 'give out' first and most entirely; the middle centres, being more organised, resist longer; and the lowest centres, being most organised, resist longest. Does not this tend to account for the special liability to exhaustion and perversity shown by the highest kind of spiritual function,—that which inherently reveals the origin, reason, and object, and also rules and directs the lower forms of natural activity in the history of religious thought and 'revelation' generally?

That in us which is in touch with the Divine is the least organised, the most sensitive, the easiest injured and lost; that in us which is in touch with the secondary sources of light and energy is more stable and persists longer, while that which has become merely matter of dogma, second-hand belief or assent—'on authority'—or prescribed conduct and obeyed law under promise and threat, belongs to the third and lowest and most organised type.

The habitual reference to 'texts' or to 'Church authority,' to dogma and creed, to the letter rather than the spirit of truth, would suggest our belonging to this third level—a very useful one while the higher ones were in abeyance, as in sleep,—but still answering to an animal level of conscious life, and not to be confounded with what alone deserves the name of the real religion of a true Manhood.

It must, however, here be observed that *there are local dissolutions of the highest centres.* We may look upon some kinds of morbid religious experiences—often accompanied with great power to attract and much real beauty—and some unnatural and overstrained developments of spiritual truth enforced as absolute dogma, as representing this most terrible of dissolutions.

Progressive muscular atrophy begins in the most voluntary

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limb—the arm; and in its most voluntary part—the hand and fingers. So also progressively spiritual atrophy befalling a Church (or community) or an individual, may perhaps be said to begin in prayer, its most voluntary function. (The atrophy of insight, leading to the decay of prophetic, that is, revealing power, is not here considered.) Recourse is had to repetition: in the higher form, of liturgy borrowed or inherited from a time of really voluntary and spontaneous religious articulation, or in the lower form of repeating by rote composed and prescribed 'offices' of our own or others' compilation as 'private devotions.' The unlikeness of this to what our Lord shows us to be the essential nature of prayer will be obvious to any one who reminds himself of its analogue—the communion of a child with its father and mother. That the child should 'perform a service,' in the sense of repeating daily or weekly some form of words; and should 'say' his talk as we speak of 'saying' our prayers, reciting in ready-made forms his reverent, loving appeal, or thanks, or confidence,—the very idea refutes itself.[1]

[1] (Note on Lecture):—"*The becoming more automatic is not dissolution, as I believe some think it to be, but is, on the contrary, evolution becoming more complete. The highest centres are the most complexly evolving, but are also the least completely evolved. In other words, the highest centres are 'the ravelled end.' In them evolution is most actively going on, whilst in some lowest centres,* e.g. *the respiratory, evolution is probably nearly completed.*"

Thus the 'liturgical' and other cognate instincts do represent the attainment of an organic aim. But we must ever bear in mind that it is the highest type of spiritual activity which is at once most complexly evolving (thus difficult to reduce to any simple 'common-sense' or 'dogmatic' definition), and least perfectly evolved, so that their experience and expression must alike be expected to have, so to speak, 'ravelled ends'; to be fragmentary, obscure, or too purely 'speculative.' The very fact that in them the evolution of religious apprehensive and interpretative faculty is actively going on entails this. We have to hope for this (not fear it); and look for it and welcome its advent, if we would

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Ultimately the highest 'motor centres' of practical moral conduct and saintly devotion *represent—or in other words co-ordinate,—movements of all parts of the* (spiritual) *organism in the most special and complex combination.*

Just as the anatomical bases of consciousness and memory (the highest nervous centres) *represent the whole person physical, consciousness represents the whole person psychical.* And may this not again form a basis or rather starting-point for that further 'layer' of personality which, *e.g.*, St. Paul calls "not I, but Christ that dwelleth in me"; that spiritual living Identity which, like the highest centres of the lesser personality, *is potentially the whole Organism*—whether of individual or Race?

Again, it may be said that, as in the nervous system, *there are three degrees of exhaustion, three increasing depths of dissolution* of the highest functions of our being; that is, of those functions which answer to the cosmical relations of our earth.

(1) *Roughly analogous to ordinary sleep with dreaming.* Here comes in (without fixed or definite delusions, or unreasonable action) a want of correspondence with what is going on round us, and a fitful and chaotic action of the religious imagination, uncontrolled by will and intelligence.

(2) *So-called loss of consciousness* of the links between outward and inward spiritual experience—*analogous to sleep with somnambulism.*

(3) *Coma, significant of the dissolution of all three layers; with which, seemingly, there is a full persistence only of 'vital' operations such as respiration and circulation,*[1]

vindicate the supremacy of that spiritual dominion which we have so suicidally called 'supernatural,' instead of claiming for it in an emphatic sense the term 'natural,' as being in a sense ultra-natural.

[1] It will be noticed that no attempt has been made in this 'translation' to apply the distinction already suggested between the 'breath'—*i.e.* the

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indicating the retention of the activity of a fourth layer belonging to a form of life low down in the organic scale.

We may, broadly speaking, distinguish on all sides in the religious world these three 'layers' of degenerating religious function; and they surely go far to account for the discredit into which the very name of religion (and indeed both theology and the spiritual life) has fallen with many of those to whom the appeal of the true energy of the 'highest centre' of Man would have met with an instant and unreserved response.

The first degree involves inability to perceive clearly and act freely and fearlessly in touch with all orders of fact and types of thought, even those which seem most diverse; confusion and illusion are consecrated as mystery or miracle, just as ignorant credulity or confident dogmatism are confounded with faith. There is a want of power to originate sequences of thought or movement, or to receive new impressions, or to express these when formed in word or act, and a want of reason and clearness in the so-called 'religious ideas'; on which indeed we may even pride ourselves, calling such blind incoherence 'faith,' and deprecating orderly lucidity as though it were something other than divine or spiritual—something baser and less worthy. We can scarcely, therefore, wonder at others calling this state of mind simply 'dreaming,' and telling us that they have awakened to the 'realities' of common-sense, of ascertained fact and logical statement. In too many of those called 'believers' it gradually deepens into a more or less complete effacement even of the dream-activity, until

spirit—world, and the world of special senses culminating in Sight and involving high rational and moral development. It seemed best to leave it as originally written, before the analogical value of the distinction had been fully tested and realised.

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at last we are actually unconscious of our own unconsciousness, and cannot conceive that there is any attainable state of active correspondence with spiritual reality, or any accessible verifying or interpreting power like in character and force to those which we call 'inspired' and 'prophetic,' but immeasurably enriched and enlarged in scope by the growth of general knowledge and the growing means of scientific test until now withheld from us.

This state betrays itself by the conviction that while at some other time or place the phenomena of active (fully awake) spiritual life—involving powers of swaying the world of mankind to which we are self-convicting strangers —were indeed all present in full use, all that is utterly gone by; that now there is no possibility of any such experience, in complete correlation with knowledge of every kind.

In this stage there is persistence only of automatic vital operations,—a spiritual breathing and a spiritual circulation, —a holy tone and atmosphere in the life, and a sacramental current through it fertilising it, showing that a real though low form of spiritual life is still present. We want that. But we want more yet.

In the ascent of spiritual life from its germ to its adult development, *the higher types of order keep down the lower.* (As in organic evolution, the higher races keep down the lower, the more complex keep down the simpler.) *Dissolution is not only a 'taking off' of the higher, but is at the very same time a 'letting go' of the lower.* The relaxation of the higher means the release of the lower. *The energies of the lower level of evolution are not goaded into activity, but are let go.*

All elaborate spiritual states in cases of unhealthy religious consciousness of every kind, are the outcome of activities of healthy spiritual functions or arrangements on

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the lower level of evolution remaining. *The more rapidly control is removed the greater is the activity on that lower level; as in the case of the furious delirium of the epileptic maniac who has undergone sudden dissolution, contrasted with the quiescence of the senile dement whose dissolution has been some thousand times slower.*[1]

Dr. Hughlings Jackson asks, "*Of what substance can the organ of mind be composed, unless of processes, representing movements and impressions? . . . No one ever touched anything (had a vivid tactual image) without moving his fingers; and no one ever saw anything (had a vivid visual image) without moving his eyes.*" And of what 'substance,' we may ask, can the true personality be composed unless of similar processes? Surely it may be said of the religious life that both to do well and to see aright are active processes, and that being is a knowing and a doing by a living One. And language—the message-giving, the revelation of thought,—in a sense the Word also, is a part of personality. It is true of the spiritual as of the physiological order, that *the question of articulation and expression (as of locomotion) is fundamentally one of movements of a very complex and special character.*

Motion is thus the ultimate secret of conscious intelligence and of living faith. *We develop as we must and as we can.* But Dr. Hughlings Jackson tells us that "*there is something more; there is what I will call Internal Evolution—a process which goes on most actively in the highest (nervous) centres. On account of its great preponderance in the highest centres of man, he differs so greatly from the lower animals.*

[1] And this ought to warn us of the tendency of that activity which we often call sudden conversion—that is an induced religious convulsion. This is totally different from a true 'sudden conversion'—the arrival of a 'soul' at its flash point—the detonation of long-accumulating fulminates.

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I contend that permanent re-arrangements (internal evolutions) are made during so-called dreamless sleep. The doctrine I submit accounts for what, at the first glance, seems the inadequate number of fibres from the lowest centres towards the highest."

And in the spiritual life also there is truly something more than the 'external' development. There is an internal evolution which goes on, thank GOD, even during the most unconscious or dreamless form of spiritual sleep. And that internal evolution is the very secret why the true Man—the Man divine in Christ—differs from, as higher than, the self-man which we call the 'natural' man; why the man in conscious relation with the spiritual cosmos is higher than the man merely in conscious relation with his own little religious planet, supposing it to be the centre of the spiritual universe. We may indeed be thankful here for the "inadequate number of fibres from the lowest centres towards the highest."

"*In the case of visual perception there is an unbroken physical circuit, complete reflex action, from sensory periphery through the highest centres back to the muscular periphery. The visual image, a purely mental state, occurs in parallelism with—arises during (not from) the activity of the two highest links of this purely physical chain; so to speak, it 'stands outside' these links.*"

And of course it may be said that 'spiritual insight' stands outside the physical links. But surely these thoughts suggest that thus it may well be not the less, but the more important and central to our experience.

It is obvious that if, as the approval of the author and of representative experts in the subject thus 'translated' seems to warrant us in assuming, this points to really valid

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correspondence between the highest mental and the most complex neural activities, we must consider in this context the question of the existence of a class of ideas which cannot be considered either as merely literal or as merely figurative, but as combining both. This, we may say, as of a fine picture, is the combination of the actual and the symbolic, of the real and the ideal.

In the case of knowledge acquired by the scientific method, we know that beyond the simple directness of sense-perception we have various forms of indirect knowledge. Perhaps the most obvious of these is found in the case of vision already touched upon. First we 'see' with the naked eye; then we acquire the telescope, and 'through' it indirectly or mediately see more; lastly, we use a sensitive plate in connection with telescope and eye, and our vision becomes doubly indirect. But we are throughout dealing with the same 'realities.'

Now we are accustomed to reason as though in the pursuit of fact or truth there could only be two possible alternatives. We are dealing either with something literal or actual, or with metaphor. The former is fact, the latter is at best merely useful illustration, essentially casual and partial, and therefore never to be treated as evidence.

Suppose, however, that what we take for mere metaphor may in some cases be *indirectly perceived fact*, which must be expressed, if at all, analogically? Suppose that there is a middle region in which we are dealing neither with the merely literal nor the merely metaphorical, but with direct, indirect, and doubly indirect experience?[1]

[1] See Note XVI., Appendix.

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CHAPTER XVIII

ONE of the main results of the backward state of language and the prevalent 'mislocution' is, of course, the unconscious see-saw of senses and meanings which goes on between the usages of the common-sense or practical man in the ordinary intercourse of life, and the usages of the scientific and philosophical teacher. The former freely uses words like Sense, Sensation, Feeling, Matter, Force, Mind, Will, in all sorts of 'senses,' according to the impulses inherited or acquired at school. These 'senses' are usually called out or suggested by experience which varies almost endlessly with age, circumstances, health, etc. The same thing happens with short sentences or conventional phrases embodying such terms.

But both words and phrases (or sentence-sections) creep out into ever wider circles of usage, and infect serious writing and careful argument on every topic. Few suspect that there is any danger in the extraordinary inconsistencies which such words and phrases carry with them in their popular use. They are harmless enough in the ordinary rambling or random talk in which mistakes are generally food for fun only, though even then they are often the source of that result of discussion which is appropriately called 'misunderstanding.'[1] But they get into higher and higher society, until at last they are

[1] See Note XVII., Appendix.

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found not only in abstract philosophical controversy, but in scientific lectures and text-books which are heard and read with a sort of veneration by the common-sense public. Thus like boomerangs they return to confirm original confusions (which probably the Lecturer or Manual-writer had himself outgrown), and make them 'worse confounded.' In this way sentences, or parts of them, as well as single words, are always swaying backwards and forwards between the extremes of literal or direct and metaphorical or indirect meaning. We suddenly find ourselves using this or that one as a pure metaphor for the first time, or as suddenly relapsing into its literal or direct use. *As the whole context is in the same case*, and cross-currents of meaning, untraced, unnoticed, ripple out in every direction (as social or other conditions become modified, and new combinations arise) we have practically no trustworthy criterion anywhere. Some newspapers are, of course, largely responsible for the flood of ambiguous writing which is daily poured forth; it is a common-place that they have inflicted 'Journalese' upon us, and helped to deteriorate rather than to raise the language standard. But once they are roused to a sense of what is lost in economy of time and trouble by preventible causes, and might be gained by consensus even of the most elementary and provisional kind, they would be the most eager and the most efficient promoters of that which would so strongly conduce to their interests. For the writer as well as the reader of 'ephemeral' literature is more and more forced to economise time and labour; and under present conditions he has to wade through swamps which could be easily drained and levelled for his use. Thus he would help to persuade parents and schoolmasters that the first need is to centre all education upon the question of 'Meaning and how to convey it.' As a fact,

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we have abundant evidence to show that the *Times* has for some years acted as a pioneer in this matter. But how little impression has been made![1]

At present a word (or phrase) means whatever the fashion (*i.e.* casual consensus of clique, set, or class) constrains it to convey. Thus 'phenomenal' is often distorted to mean unusual, exceptional, very large, simply odd or tiresome, or anything else that idly occurs to the first comer who starts a mere fashion in language. And here lies the promise of the future. Sometimes we have many ways of saying one thing and few of saying another; then it is well to take a word out of the richer store to add to the poorer. But the old word transplanted will not mean exactly what the established word has done. And when we use it in the old sense, we find that we are not properly understood, except in purely technical writing.[2] But we must learn to

[1] For instance, take the grovelling helplessness revealed in passages like the following:—"The term 'law' has undergone so many changes of meaning since it was first introduced from jurisprudence into the various sciences, that it would be futile to try now to oppose its use where it has once been firmly established" (*Lectures, etc.*, Oertel (1902), p. 262). Suppose that this had been said of the slave-trade or of children's labour and the other social abuses which have been successfully opposed? Of course, the attitude of mind which assumes all attempt at resistance or reform to be 'futile,' creates the futility. With minds of this stamp—too many, unhappily, in positions of official authority—President Roosevelt's success in the recent coal-strike (1902) would have been impossible.

[2] Even in this we find cases where the use of a term is persisted in when practically it only serves to perpetuate needless controversy. In a review of Wundt's *Grundzüge der physiologischen Psychologie*, 1902 (*Nature*, Nov. 6, 1902), the writer says: "The discussions of the functions of the cortex and especially of the 'speech-centres' are admirably thorough and suggestive, and here Wundt gives a great development to the conception of a 'brain-centre.' It is, perhaps, to be regretted that he retains the term 'centre,' for it properly expresses a crude conception of which the period of usefulness is now at an end." Then surely the experts ought unanimously to discontinue its use!

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control and order all this. For one thing meaning is not, and that is 'plain' in the sense of being the same at all times, in all places, and to all.[1]

Besides the words and phrases which, on the whole, have risen or fallen steadily in meaning, there are those which seem to rise and fall in irregular tidal rhythms, the law of which perhaps some day we may learn to understand better than we do now; we may even arrive at 'curves' of thought revealed by change of meaning. And these 'curves' are probably far less simple and less easily mastered than either the missionary of religion or the anthropological missionary has imagined.

Translation considered as mental digestion renders foreign substances' innocuous if not actually nourishing. Digestion (next to vibration turned into sense-product) is the ruling example of translative change. Even waste product manures the glorious rose, the corn, the vine, etc., and water, through the agency of 'life,' becomes sap, grape-juice, wine. For in the larger sense wherein it is here used, translation includes transformation.[2]

[1] There is nothing more curious than the prevalence of the myth of the 'plain' meaning which all can read at all times and in all places. Probably the only type of this which exists out of the sphere of mathematical formula is that of the gesture indicating hunger; yet controversialists like Sir W. Harcourt tell us that some types of mind "seem to labour under an invincible incapacity to attach a plain meaning to plain words" (*Times*, January 19, 1899). As if, except in the loosest sense, any one could!

[2] It is worth remembering that not only can you translate the serious into the humorous and *vice versa* (though the latter is too seldom done) but you can translate from one sphere of humour into another. *E.g.* Alice in Wonderland translated by the *Westminster Gazette*, pictures and all; a perfect example of translation from the social into the political sphere.

Again, Darwin's *Expression of the Emotions* has stimulated and indeed started a good deal of research into the origin of emotional signs; but we

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But we think that to digest what we have read, marked, and learnt does not mean that we ought to expect results from acting thus, analogous to the results of actual digestion. The consequence is that this metaphor actually hinders us in expressing what we mean. We look for what, judged by our own figure, we cannot have. Digested food is profoundly changed by the process. If I say, "I will carefully weigh your statement after sifting the evidence you have brought," I give you quite a different impression from what you would have received if I had said, "I will carefully sow, cultivate, and then eat and assimilate your statement, and let you know the result." The latter alone refers to digestion: sifting and weighing belong to quite another order of ideas. At present a really illustrative use of metaphor would often read like burlesque. But this is a great loss.

It is obvious that in the literal sense the translation of

do not enough notice the importance of the translation of these which is always going on. The history of the licking of a dog, of a kiss, of an arm round the neck or 'waist,' of stroking, even of a loving smile, gains a new ethical significance when we realise that these and other signs of attachment and even tender or passionate affection have been translated from savage violence and the natural expressions of hatred or contempt; while the trembling, faintness, and tears of sudden joy or thankful relief were originally signs of suffering or terror. The lesson here seems to be that we are utterly wrong in trying merely to eradicate evil tendencies in children or savages; what we have to aim at is always the *translation* of these into the corresponding good. But until the wide application of the term, especially in training, is realised, we cannot hope to effect this.

In one case, however, it has been successfully done for practical purposes. The sheep-dog's enthusiasm in guiding and guarding the flock which he has been trained to supervise is the translation into its converse of the wild dog's instinct to hunt, scatter, and destroy them. It is said that the intense energy with which the collie pursues his translated vocation makes him liable, unless precautions are taken, to die prematurely of heart-disease.

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one language into another (and the degree in which it is possible) depends on the ultimate common character of the two. In this case that community of nature is settled already. We admit that the languages are human, and that therefore they belong to the same category; the differences are all secondary.

Thus the translation whether good or bad must always be valid, justifiable; we discover that we have one thing in two forms. And this conclusion is only strengthened if we refer to the original meaning of translation, which is spatial—a transference of position. But there is another sense in which translation of this kind may necessarily fail, because it cannot convey the subtle context of association, that Significance which is the highest form of meaning. As Jowett well says, "The famous dispute between Nominalists and Realists would never have been heard of, if, instead of transferring the platonic ideas into a crude Latin phraseology, the spirit of Plato had been truly understood and appreciated."[1]

Translation, again, may be admirable from the linguistic, the grammatical, and idiomatic point of view, and yet detestable from the literary standpoint. Only when it is admirable from the highest point of view does it become a version. And the typical example of this is the authorised translation of the Old Testament.

As well remarked in an article in the *Times* on "The Poetry of King Alfred,"[2] "the originality which is felt in Alfred's work through the guise of translation consists largely in his masterful transformation of his text, like a man whose purpose is well known to himself and is remote from aims merely literary." The instance taken is the passage in

[1] *Plato*, vol. iv. p. 39 (3rd ed., 1892).
[2] August 20, 1901.

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which "the position of the Earth in the celestial system is likened to the yolk in an egg":

> similar to what we see in an egg;
> the yolk in the midst, and yet gliding free,
> the egg round about. So all the world resteth
> still in its place, while streaming around
> water-floods play, welkin and stars;
> and the shining shell circleth about,
> day by day now as it did long ago.

The writer continues:—"But in this simile of the egg the text has no part; it is a solid addition from his own stores, and it illustrates the purpose of his mind. He is seeking to convey great ideas by easy and familiar means; he is seeking to bring down the lore of the philosopher to the comprehension of his untutored folk. The egg manifests this purpose in a concrete and conspicuous manner, and it is a typical example of his teaching." Here we have a case of conscientious analogy.

Just as it is the human prerogative to translate the organic form of appreciating what sign signifies into the intellectual form of intentionally interpreting symbol, and to translate sense-impression into the terms of its excitant, so it is the highest form of that prerogative to translate the intellectual form of interpretation into what for want of a better term may be called verified or disciplined mysticism, that which has passed through the ordeal of science.[1] Also 'mysticism' is often the raw material, or at least the forerunner, the 'onseeing' of science. The dreams of alchemy have thus been transmuted into the achievements of chemistry, its prayer has been answered in an unexpected sense; it has been itself transmuted from base metal into

[1] There are many signs of the advent of this, notably in recent articles in *Nature*.

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gold; the dreams of astrology have become the realities of astronomy. We have reached no final limit in either, and are warned that the progress of science is never linear, but that the next advance (as in the biological 'tree') may involve new direction in departure. And direction is often more important than distance.

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CHAPTER XIX

TAKING what is, at least so far as it goes, one of our best analogies, we may say that the world of man's thought, like the world of his sense-life, goes through a period of merely diffused light; through impenetrable belts of cloud wherein the sun, the fellow-planets, and, beyond both, the stellar universe,—its nebulæ, its comets, its sun-systems,—can only be inferred, or can only bestir us and evoke 'intuitive' response as do the X-rays, through apparently dense media, and as shadows of real objects. The visible light rays then belong to a higher and future development. And the present study of the phenomena of Radiation or Radiancy seems to point to a similar advance.

For it is not for nothing that we honour the man who 'throws light' upon the obscurities and 'clears away the mists and fogs' of life; it is not accidental that we use the post-Copernican relation between sun and earth; although, alas! side by side with that true translation we preserve the false translation, the misinterpretation of earth as fixed and central.

The idea of Translation in all its applications naturally implies the recognition of Distinction, and starts from the conception (or principle) of Equation, which is in the quantitative what Translation (the discovery and application of the common element in the diverse or different) is

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in the qualitative sphere. Much work, like that done by Mayer and Joule, remains to be attempted on a different plane. But it is obvious that only within narrow limits can we expect to find mechanical or even logically perfect equivalence. And even if we did we might suspect (in the world of mind) that the one was the derivative or reflection of the other; that we had found the analogue of the mirror. This, of course, cannot be excluded from the domain of translation in its extended (signific) sense; but we must carefully understand its conditions.[1]

But Translation may be helpful, that is, revelative and illuminative, when there is much less literal correspondence than in this case. It applies wherever there is a presumable unity implied in differences which can be distinguished.[2]

[1] A good case of doubtful 'translation' seems to be afforded by Dr. Haacke, who "seeks to prove that the mechanical conception of nature leaves room for faith in a moral order of nature, by showing that natural bodies and organisms, and human ideals alike follow a great law of tendency to equilibrium." In his book (reviewed in *Nature*, April 2, 1896) "Schopenhauer's 'will to live' is replaced by the 'will to equilibrate,'" and he shows that "art, morality, and religion exhibit the tendency to unite various elements into an equilibrium, that is, in simpler language, into an organic system." The reviewer, however, objects that "Dr. Haacke apparently takes natural selection to be a force instead of a mere process according to which forces act, dismisses it for this reason, and sets up in its place an unreal striving after equilibrium, which equilibrium is only an effect."

The kind of distinction which is nearest to actual identity may be illustrated by $12+8=15+5$. Though these are both 20 there is a difference caused by logical perspective; we think the result in either way from either standpoint.

[2] "He (Emerson) respects common-sense, and dreads to disturb his vague aspirations by translating them into a definite system. . . . (He) may even be translated into the phraseology of the humble 'Lockist'" ("Emerson," Leslie Stephen, *National Review*, Feb. 1901, p. 890).

"The leaders of the Conservative party carry their sublime heads in clouds far above the common affairs of municipal life. They have never translated Imperialism into terms that fit these affairs, or thought out

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What we want is neither an artificial mode of uniting the apparently diverse, discrepant, separate, nor an equally artificial postulate of primary identity which either ignores, minimises, or excludes distinction.[1]

As Translation involves both unity and distinction (the one actually and the other implicitly), language must itself be recognised as the means of discovering contrasts together with the links which constitute them elements of unity, or at least completely exclude the idea of final disparateness. Even the wildest analogy which betrays itself in popular or inherited (and animistic) metaphor is seen as a serious effort to accomplish this rational duty, one in which, as a fact, the whole race at all stages of its psychological ascent shares. For a thing is significant, both in the lower and in the higher sense, in proportion as it is expressible through bare sign or pictorial symbol or representative action. In the higher sense (that of vital or moral or rational importance) it is significant in proportion as it is capable of expressing itself in, or being translated into, more and more phases of thought or branches of science. The more varied and rich our employment of signs (so long as such employment be duly critical, securing that we know well what we are doing, also the indispensable condition of humour), the greater our power of inter-relating, inter-translating, various phases of thought, and thus of coming closer and closer to the nature of things in the sense of starting-points for the acquisition of fresh knowledge, new truth.

social and economic problems from any independent standpoint" (*Times*, March 4, 1901).

[1] An amusing instance of the double sense of translation occurs in the *Westminster Gazette* (Sept. 2, 1902), where the heading "Chinese 'Character' Mistranslated" may perhaps describe some diplomatic dealings with that enigmatic race, while it directly refers to a hitch in the verbal rendering of a treaty.

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As the distinction between the 'physical' and the 'mental' world is one of the last analysis, an answer to those who would doubt the validity of a translation of the one into the terms of the other is to be found in the word 'sense.' This in Latin and all derivative languages has references of observation as well as of ulterior meaning: there being involved in this word a translation which is perfect, from the perceptual to the conceptual. At first sight, like many other terms used in more than one sense, 'sense' itself seems merely ambiguous. But we have seen that there is an ambiguity, which, as the witness to one reality in diverse forms, is of high value.

Further, the physical certainly expresses itself in the psychical, and, in a slightly different sense, the mental in the physical. And this identity of result may be observed any day: mental conditions may be reflected in a man's bodily appearance—often against his will; and the environment expresses itself in our ideas of it. The strictly metaphysical aspect of this question, however, needs fuller consideration than can be given to it in a mere introductory sketch of the subject called Significs.

There is another aspect of Translation already touched upon which might well be utilised in controversy, and has in fact been found of definite service. In an ordinary discussion or argument, the controversialist endeavours simply to overthrow or discredit his adversary's position or contention. Each proceeds against the other as the champion of an opposite thesis. But in the end, it is evident that whichever side prevails, the upshot is nothing more than the displacement of one view by another. Now, instead of this, the object of each controversialist should be to translate the adversary's own position to him. And in proportion as our own position is really the most

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valid, we shall be able to afford to look as it were through his eyes and to call his attention to what, on his own showing, he is bound to see and has unwittingly overlooked.

But in order to do this effectually it is necessary genuinely to follow his line of thought; and the present contention is that only a previous training in Significs can enable the ordinary mind to surmount the difficulties of this task. Even if we succeed we shall almost certainly find that either we have ourselves dropped out some factor, the loss of which invalidates our own train of reasoning and has exposed us to his attacks; or are unconsciously starting from some premiss no longer tenable; or have stopped short in our advance at some arbitrary point or selected finality which suited the convenience of our thinking or feeling; or else that our opponent has done one or all of these things.[1]

Then the premiss on either side can be revised, the missing links provided; and above all, the logical journey continued at whatever cost to our respective predilections. If in any controversy we feel that we can afford to do this, the probability is, as has already been suggested, that we shall supply our opponent with a new perspective from which he can see an unsuspected value in our position or force in our contention. And we shall avoid the hindering appearance of gaining a victory at our adversary's expense. He will say: in that sense I can admit that my position needs revision. In making himself stronger with the help we have had the courage to give him, he will strengthen

[1] And be it noted, we as well as our opponent (if we have thoroughly entered into the scientific attitude) shall be nearly certain to discover that this has largely been due to the relatively undeveloped state of articulate expression. Language is too often allowed to remain the accomplice of a 'personal equation' which in any case is sure to be potent and persistent.

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us also. For instead of the mere substitution of one half-view for another, or, on the other hand, the mere mixture, so to speak, of some oil with some water of thought, we shall better understand the causes of our difference, and make that difference (which may even be one of race) a means, through combination, of enriching the common store of truth.

There is, however, yet another aspect of Translation in its transformative character which sends us for examples to the world of physical science. We may say that the biological justification of the principle is found in cases such as that described by Professor A. M. Marshall,[1] in which one species is transformed into another by the modifying action of environment. And of course the fact of transformation by preferential breeding and by domestication is also a case in point. It is deplorable that we should neglect as we do the educational value of such facts. Like the facts of physical training, they all need translation into our systems of mental training and of thought.

We have only to consult thinkers like Professor Ernst Mach (who at least cannot be accused of idealistic metaphysics!) to realise that what he calls "that veritable miracle of thought-transference . . . communication by language,"[2] is the very supposition of all thinking, and is essentially translation in the sense now suggested, that is, as including transformation, transmutation, and transfiguration, making translucent and transparent, recognising as the medium of all mediums that Expression which, alas! we have been too content to leave opaque and dense in a sense which might almost be said to confine us within pre-visual limits.

[1] *Lectures*, pp. 30-33 (1894).

[2] See Note XVIII., Appendix.

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CHAPTER XX

EVEN the Darwinian thinker ought to be able to defend his position in far less vulnerable terms than he does. The 'Origin' of species, Natural 'Selection,' the 'Descent' of man, are all cases in point; so is the 'rudimentary' used for 'vestigial'; while the extreme materialist, rationalist, idealist, and spiritualist are all victims of the falsities of Expression which once, in another age, were truths. While thus truth remains the same (though in no fixed or rigid sense), the life of mankind describes a curve round it, and it is impossible to express in identical terms the different, the even contrasted outlooks which his spiral advance, like that of his world, gives him. Put solar for Divine, and planetary for Human,—that is, sun for Divine centre, for GOD; and planet for Man, for the offspring and satellite of that centre —and you have at once the greatest and the truest analogy for religion.[1] It is heliotropic and beyond that cosmotropic, never geocentric. If this contention seems to involve the

[1] It ought to be noted that this is not a quantitative figure. The objection that thus we are postulating a host of divinities, each with its system of satellites, is irrelevant. We are speaking only of a relation and from the qualitative point of view. In this sense we may, if we will, conceive the known universe itself as such a solar centre with dependent worlds beyond our ken revolving round it; or as in its turn one 'planet' of a further and unimaginable 'Sun.' It is not a question either of size or of number.

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difficult question of the Divine Personality (made surely more difficult by irrelevant assumptions), we must repeat that in these cases we are compelled to use the signs by which we express mental facts, as metaphors for what these facts suggest to us.

We can never rightly ascribe any quality to the Divine which makes it Divine to us, without doing this very thing. We feel something as Divine, because this has become a metaphor for the most vital of our ideals. We accept the ideal of a supreme love, truth, justice, even though we cannot believe in its personal realisation. So, when we postulate Divine facts, we express them in human metaphor. We already use such terms as father, mother, brother, sister, in more than their literal sense on the human plane. Then in turn we apply them to that which, though we can only approach or imagine it through the human, cannot be more than figured by the human, unless, indeed, once more we recognise the natural presumption that planetary humanity is but an infantile form of that which may be assumed to belong to a solar and a cosmic 'world'; in which case our anthropomorphism is also the natural expression of the predictive, which is also the immature. We must either feel that personality is but a metaphor as applied to Perfect Being, or that indeed our own personality is but the metaphor—in a true sense the image—of the Divine personality. That, at least, accounts for our instinct of protest against all that would degrade or debase humanity as the manifestation of a Life which is true, whether that protest be against vice or selfishness, or against 'infidelity' on the one hand and 'superstition' on the other. Both dishonour what we see as pure and noble, and as the very light of life. We cannot be too thankful that language already compels us to confess the 'heavenly,' the solar, the cosmic relation. Whatever raises,

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exalts, is higher in scale and standard, *that* the Man worthy of his race aspires to and welcomes. Whatever degrades and debases, such a man repudiates with scorn. The process of evolution itself is one which he calls 'ascension,' although it may and does include that of reversion and degeneration.

It must be once more repeated that, whether we will or no, our thought starts from analogy. Strip all away, and still you cannot speak except by assuming the analogy between your mind and the mind you speak to. In the same way, learn to assume the post-Copernican analogy and you will find it work better in practice than the pre-Copernican. Christ is not merely the supreme outcome and flower of the race any more than the sun or its rays are the highest product of the earth, or light its gift to the universe. He is and manifests the Energy which is solar to us; and we may rejoice to think of the infinite riches of such radiating Energy.

But in the case of all analogy, its claim in any given case to be valid has to be established by evidence; it has endless degrees of presumable validity. It has to vindicate its claim to be more than a casual illustration, however brilliant and forcible. We are right in saying that analogy is not argument, and we cannot too carefully examine the ground on which we appeal to this or that one, and form any conclusion from it.[1] For the very virtue of analogy lies in its supposed or professed ability to relate modes of experience apparently divergent, even discrepant, but certainly discrete and disparate, and to relate these in such a manner as to increase our productive command over the two apparently incompatible or unrelated lines of thought or work.

[1] Is not metaphorical gesture the earliest application of analogy in figure and always valid?

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What, then, is the evidence to which we must appeal? First, the conditions of the comparison made; and, secondly, its results. The 'leading case' which must govern all our ideas of 'stating one part of experience in the terms of another' is, of course, that which man has from the first been compelled to do; that is, after having named his own muscular activities, and then bestowed these names on the motions which he saw in the world around him, to proceed to speak of his own 'feelings' and thinking processes in terms of these physical activities. At a later stage this process again reversed itself, and we find him expressing the phenomena in nature, and their changes, in terms of his own emotions or sensations.

If we had really been trained to understand not merely the changes, but the nature and work and place, the endless richness and growing variety of the ideas of Sense, Meaning, and Significance; if we had really learnt the inestimable value of organising our present 'chaos' of expression; if we had only in expression arrived at the point which the method of physical science has reached,—it would be difficult to exaggerate the effect on current controversy.

Take the case of 'miracle.' It is strange how little even yet we act upon the knowledge that, as Harnack reminds us, "the strict conception which we now attach to the word 'miracle' was in former times unknown; it came in only with a knowledge of the laws of nature and their general validity"; and that primarily "no sound insight existed into what was possible and what was impossible, what was rule and what was exception," so that even a thousand years ago there were "no such things as miracles in the strict sense of the word."[1]

[1] *What is Christianity?* Adolf Harnack, trans. by T. Bailey Saunders (1901), p. 25.

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The same writer asks how, since we all live "in a language of metaphor," we can "avoid conceiving that which is Divine and makes us free, as a mighty power working upon the order of Nature, and breaking through or arresting it?"[1] This of course, as he says, belongs to the realm of fantasy. But how if we have never thought of translating the Divine in the light of our solar dependence? Harnack clearly sees that no one has yet set bounds to the actual, much less to the possible. But of much that now baffles us, "perhaps the meaning will dawn upon you later, and the story assume a significance of which you never dreamt."[2] Only first we must train ourselves and our children to see that this meaning and this significance, as in this case properly distinguished, are themselves, with the sense that as it were mothers them, our main concern.

Part of our discontent and pessimism is 'planetary, and therefore must and will be outgrown. But part is the voice of the 'cosmos' in us, its messengers and spokesmen (as even a microbe may be the ambassador of life); for we are the offspring of that parent, and our ideals imply aspirations as real as the universe which prompts them. Only, these ideals and desires need enormous exaltation. We do not know yet how mean they are, because we do not know how much we are fettered by mistaking the mind of a mere speck-world, a second-rate planet of a minute system, for the mind of that system or of that which the system belongs to. Why, for instance, should we always insist on 'grasping' a subject, and refuse to 'touch' it unless we can grasp it; while what can neither be grasped nor touched is simply ignored? Have we really evolved no eyes? Does the astronomer grasp the Milky Way? and if he cannot reach and touch Sirius, or even Mars, can he tell us

[1] *What is Christianity?* p. 27. [2] *Ibid.* p. 29.

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nothing at all about them? What cannot be grasped we think may be neglected, for it must be beyond our reach, and therefore any attempt to deal with it becomes futile. We might as well describe astronomy as manifestly speculative and therefore essentially visionary. We are bidden to believe that if we could reach or touch them we should find some of the heavenly objects solid or at least materially real, but this, we might protest, is either an appeal to faith or a merely logical inference. Let us confine ourselves to the tangible and *over*stand the solid ground! We can only *under*stand the heavens as blue ceilings studded with discs and points of light. Probably some day we shall find that they are all survivals of primordial illusions born of that instinct for the transcendental out of which we must grow.[1] We have projected them as we have projected our pains and aches into our extremities; and they are therefore like our philosophies and our religions, which, indeed, are concerned with the so-called universe and the so-called heavens. Earth, and Earth alone, we proclaim with misplaced arrogance, is our heritage; for the things of that alone are really within our grasp, of that we can take firm hold, and it is thus only that the messages of sight can be tested. Once leave this solid standing-ground and we are the victims of hallucinations at every step.[2]

We used to assume the earth (touch) and arrive at the sun (vision). Now we get our truest cosmology by assuming the sun (vision) and arriving at the earth (touch). We need to come back to a world of Touch—an amœbic world—with the spoils of an evolved Vision. Then we should no longer confine our interest to the 'tangible'

[1] In another sense this is true. We have to 'grow out' of these instincts or intuitions as out of a fertilised germ.

[2] This is hardly a caricature of the attitude of the 'positivist.'

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or dread the 'transcendent'; our only fear would be lest we should confound the subjective illusion with the objective reality, like the man who identified an assailant "by the flash of light his blow on my eye produced"![1]

[1] Like many other writers, Mr. A. E. Taylor (*The Problem of Conduct*, p. 20) protests against the use of a physical term like 'energy' to express mental phenomena. I am, of course, the last person to complain of any one's denouncing the abuse of physical imagery. But I fear that here, as usual, the practice is only complained of where it makes for a view disliked by the writer, and in all others is unconsciously followed. In truth, our whole mental vocabulary is borrowed from the physical world, though it was originally the expression of our own organic 'activities.'

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CHAPTER XXI

SIGNIFICS, then, will bring us the philosophy of Significance; *i.e.* a raising of our whole conception of meaning to a higher and more efficient level; a bringing cosmos out of the present 'chaos' of our ideas as to sense, meaning, and significance, and showing us that we need to use these terms in a certain order of value and range. Its best type of metaphor is the 'solar,' its best mine of analogy is the biological; because, as implying an extension of purview given us in spatial form by (post-Copernican) astronomy, it tends to relate the idea of life to the ideas of motion and matter, and moreover to relate the idea of mind to both. Thus Significs involves essentially and typically the philosophy of Interpretation, of Translation, and thereby of a mode of synthesis accepted and worked with by science and philosophy alike; profoundly modifying what we wrongly call the 'root' ideas of religion, of ethics, of poetry, of art, and, lastly, of practical life in all forms. But if studied systematically it would be seen from the first to provide a method of observation, a mode of experiment which extends far beyond the laboratory, and includes the inductive and deductive methods in one process. There would never be any need to struggle that this view of things may supersede others; it could never be a supplanting system, and could never thus be attached to any individual name;

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it must necessarily be worked out by many co-operating minds. The principle involved forms a natural self-acting Critique of every system in turn, including the common-sense ideal. But also it gives the gist, the vital centre, the growth-point of every existent organism of thought. It explains its own thinker to himself; it accounts for his thinking what he does as he does, and thus explains other thinkers to themselves. In fact, for the first time we gain a glimpse into what lies 'beyond the veil,' which both our own primitive and confused idea of Meaning and our modes of applying it have drawn over the world. The criteria thus reached will vindicate themselves alike to the most opposed of our thinkers.

As in the biological there is presumably in the mental world a tendency to recapitulation. Indeed, comparative mythology and folk-lore have brought to light what correspond to the miscalled rudimentary, really vestigial, survivals in modern thought. It would seem also that the present pre-Copernican character of science as applied to theories of life and mind (and called Positivism or Agnosticism) is a case of atavism. We may be supposed to have re-developed the Ptolemaic mode of thought (as we may revert to a lower level physiologically), having yet to reach in full mental use the Copernican scheme of cosmogony.

Thus our thinking is full of practical fallacy. We are unconsciously bound by a travesty of Euclid. And we have not merely to be true to Euclidean geometry in so far as it still holds good, but to advance with the geometrical thinkers who (as presumably he would himself now have done) are finding his limitations provisional.

To refer once more to instances already dealt with, we assume that the farther you go on a given 'line' of thought, the farther you go from your starting-point. But this does

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not follow. It will be objected at once that what the positive curvature of space symbolises is ultimately a closed sphere. Thus you instantly have to conceive another one outside of it which might be reached and traversed, so that the 'fallacy' is true again. No. The true idea of the content of the conception of infinity is not that it is merely quantitative; it not only means area after area of experience or of anything else; it means infinity in Change in the sense of transformation from worse to better in our ideal of the universe, our theory of the knower and the known. It is a question of change in direction and change in quality; the fourth dimension, whether reached in tenable form or no, is a parable of this; so is 'mind' itself with reference to the organic,—it is 'infinite' to that: it is not subject to the same limitations, though it has some of its own.[1] But then what a disgrace to have only a negative term for this! To the 'geocentricist' to stand over or upon; to the 'solarist' to stand under, and to the 'cosmicist' to stand within: these are the three forms of 'apprehension' which, fortunately, we do call under-, not over-standing. If only we were consistent in this! But all alike must learn to do more than stand, must learn to move and to advance and to 'rise.' Corresponding to this we have three forms of experience rendered by metaphors: one of line, one of surface, one of cube. No doubt the three are ultimately one; but to our great practical loss and danger we confound their distinctions.

That which 'transcends' in any sense the ordinary limits of experience is often rightly enough referred to the vague, unknown, unsafe, unreal. Well, that 'beyond' which the telescope and spectroscope bring us (especially

[1] When the above was written I knew nothing of Croll's theory of direction *v.* force.

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the latter) gives us the bases of the most accurate predictions which science makes. The tree is known by its fruit. No one would protest against transcendency of that kind. Now think of the incredible power of projection possessed by plant and insect, as shown in the ejection of seeds, the jumping of grasshoppers, etc. This is at least a hundred times greater than our own muscular power. Suppose that by contracting into the scale of the insect we were to gain a tremendous projective power? Perhaps the demand for greater size as the invariable concomitant of fuller power to which we are so much addicted would thus be relegated to a truer place. The greater energy often belongs to the smaller body.

Again, in this region of greater intensity we find a minute world the existence of which we had not suspected; and here lie many answers to Whys that we have vainly sought in the expansive 'beyond.'

The truth is that hitherto we have been content to go to the root of the matter and the foundation of things. And when we have got there and described what we found, we are surprised and disappointed at the very partial welcome which our proposed solutions of life problems find. But it cannot be too often repeated that nothing (except indeed lateral rootlets) springs from a root, and all that is greatest (or its symbol) is unfounded. There is, for instance, no basis for this present statement; it has to do with the worlds which roll in space, 'solidly' real and absolutely secure in an orderly orbit; and what is of ultimate concern to our thought is the whither of its Way.

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CHAPTER XXII

IT now becomes desirable to go at some length into a view of the primitive mind which has already been elsewhere suggested, and has met with some degree of welcome from students of the subject.[1] For this forms the natural introduction to the 'signific' treatment of the subject of education.

When the method of significs has made possible the philosophy of significance (and we must have the method, as the way to it, first), we shall for the first time have a right to say that Man is in a true sense the expression of the world, since it finds in him articulate description and definition; and therefore significance (the pressure of the Excitant, the Answer-world, stimulating us to Question) is the bond of bonds and the very character of true unity. All races and all types can meet here, on the lowest grade, that of sense, on the higher, that of meaning, on the highest, that of significance.

What, then, are we to think of the beginnings of man looked at from this point of view? How can it be related to the facts of that unbroken ascent from the protozoic life-

[1] "Is there a Break in Mental Evolution?" paper read at the British Association, 1890; "An Apparent Paradox in Mental Evolution," paper read at the Anthropological Institute, December 9, 1890; "The Significance of Folk-Lore," paper read at the International Folk-Lore Congress, 1891.

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forms which is assumed by physical science? The most widely-held recent views of the 'primitive mind' involve a startling jump from the coercive action of natural fact upon physiological and psychological response, to the wildest licence of grotesque fancy. Instead of a consistency (even too rigid) of human custom and belief naturally succeeding a consensus of organic reaction, we have to assume a collapse into violent and even deliberate defiance of the very order which has hitherto dominated all the vital and psychical activities. And this not as sporadic, not as individual variation from a common standard of primitive 'common-sense,' but as collective and indeed universal in the earliest tribal stages. Yet "in treating of illusions we shall assume, what science as distinguished from philosophy is bound to assume, namely, that human experience is consistent; that men's perceptions and beliefs fall into a consensus. From this point of view illusion is seen to arise through some exceptional feature in the situation and condition of the individual, which for the time breaks the chain of intellectual solidarity which, under ordinary circumstances, binds the single member to the collective body."[1]

Now the 'intellectual solidarity' here postulated by Professor Sully takes, of course, in the earliest and latest stages of intellectual development a different form. In the earlier types, custom and habit, reinforcing the organic tradition, must be the ruling factors; in the later, a rational discipline has set the conceptual power free (as *e.g.* in mathematics) to construct system and interpret it. But in both alike the condition of social coherence and even of the recognition of a 'common humanity' is an adaptive consensus in reading the facts of nature.[2]

[1] *Illusions*, James Sully, p. 8 (4th edition, 1895).

[2] "Not the least prominent feature of Vaudoux is the drum that calls

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The question here therefore is, Did the early mind start from a complete break and therefore blank, and proceed to evolve a universal consensus in favour not merely of illusion, but of complicated forms of what is virtually delirium? Or did it carry over into the imaginative and intellectual region certain self-acting clues derived through the organic from the physical world?

Supposing the early mind had such clues, and that these and all else with which we credit 'mind' came to us with the primeval energies which built up the world and brought forth life upon it, how then are we to account for the curiously unanimous devotion to elaborate and oppressive tribal ritual

the worshippers together. One which I saw and examined was four feet high. Its frame was made of some jointed wood like bamboo, in girth it was as large as a man's trunk. The upper surface was of black goatskin, thinned by the thrumming of many fingers, with hair still adhering to the edges where it was pegged to the frame.

"This instrument is so singularly constructed that although at a distance of a mile or more it sounds loudly, near at hand its throbbing note is indistinct and low.

"Where the negro picked up this secret in acoustics it is hard to imagine. But the peculiarity has an important use. A sect with rites like the Vaudoux have naturally strong reasons for desiring that none but the initiated should be present at their gatherings: hence the low, misleading sound that mutters about you when the drum is played close at hand, whereas the initiated, who have warning of a sacrifice, hear the call at really wonderful distances, and at once proceed to the appointed spot.

"The difficulty of following up the low throb at close quarters is extraordinary. On several occasions I have tried to trace from the ear alone the unmistakable vibration, and have failed. There is some thrilling quality in the muffled and mysterious beat which cannot be described, but which stirs the pulse in spite of familiarity" (*Where Black Rules White*, H. Prichard, pp. 79-80; 1900).

This, like the hitherto inscrutable rapidity with which, *e.g.* in Africa, news will spread over a vast continent without civilised means of communication, seems to suggest a fund of psychological power not yet drawn upon, because not properly studied and understood by the civilised world, which has lost many aptitudes once common.

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(and to beliefs starting from those), of which the common experience was constantly demonstrating the futility? True that, as we shall at once be reminded, there was no intellectual absurdity in even the most grotesque forms of belief. The idea of order or law in 'nature' only accrues at a much later date than any with which we are now concerned. Thus one idea of nature is as reasonable or probable as another, and no miracle of any kind is in question. But the usual inferences from this still ignore the inexorable pressure of the routine of response, the violation or neglect of which meant to the organism death. And this routine of response must have tended to survive in the form of intelligence.

We shall be answered when we are shown where the break occurs which releases the earliest 'mind' and its imaginative and inferential power from the strong ties of the reflex type of 'response,'—before that 'mind' has acquired the culminating 'faculty' of abstraction, also of logical, metaphysical, introspective analysis and generalisation, in the forms found in the highest Greek and other culture. What is here meant by the reflex type of response is the tendency to react upon definite stimuli without the smallest reference to 'fictitious resemblance' or to any difference which does not affect the reaction itself.

Take two instances: (1) The sense of taste at once detects and reacts on the one point of real resemblance between 'saccharine' and 'sugar'; all the wide differences are ignored; reaction in the normal condition is invariable. (2) The story of the pike in the tank. This now celebrated fish was separated from the small fry which is his ordinary prey by a glass partition. Every time he darted at the fish he was stopped by this invisible obstacle. But for a very long time he went on obeying the established inference:

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"There is my food, I ought to be able to seize it," in spite of his thumps against the ghostly glass. Now (unlike the later wayward and desultory spectre!) the glass ghost was invariably persistent. Therefore at last its substantial reality forced itself upon the slow-learning 'mind' of the pike, and in spite of his desire for the prey he refused any longer to hurt himself uselessly.[1]

Now to transfer this to the human level. Our human pike sees, so to speak, the food and drink, the shelter, weapons, tools, etc. waiting for his use. He inherits the tendency to react to all such 'substantial' appeals.

But now and then something odd seems to him to come in his way; his attention finds something interposed between it and the usual objects. Perhaps it is visible; but then it cannot be smelt or touched, and it is constantly changing in character, while dislocating the rest of experience in many ways. It may give (as in dream) a vivid 'impression,' but the experiences usually associated with it are not there to enforce and maintain it. Yet he at once and permanently accepts this curious intervention, this thread of alien mystery running athwart his life; and he actually orders that life in accordance with endlessly shifting phantasms, whether of dream or waking life, without a moment's delay or struggle! How then has he so completely lost the sound instinct which the pike represented? It is to be noted that in the instance taken, the pike ignores in his persevering efforts, not vision, but the fundamental sense of resistance. And in favour of what? Of running after flowers instead of small fry? Of taking a stone for a fellow-pike? No; in favour of the primary demand for food. For this it was habitual to overcome

[1] Darwin's *Descent of Man*, p. 75 (2nd edit. 1888) (the Möbius experiment).

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resistance, whether of the prey
shelter which could be broken
human animal collapses at t
position, failing in the recog
immediate descendant of the lif

The primitive mind, as Dr.
before all things logical and co
Then why did not early man tr
a tool, a house, a wife, for the m
venerated, and would fain serve
induce dreams for the sake of
dream-land. And he must ea
limited extent this was possible
his dream-sequences. But w
man actually felt, seen, remem
dreamt; (2) the man and his sh
vital energy carried on into fo
and his weapons, tools, etc., w
The two last alone are in our e
first are quite clearly separabl
the third blended or fused.

We credit the human pri
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This wayward welcome, strang
corrective, is supposed to be me
It is not a case of that norma
we find within well-defined li
tion which we rightly call mo
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to fur and the plant to gills;
dog's nose, and a cow develope
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well within the organic preroga

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and rearrangement of existing organic conditions. But it does not happen, and if it did the animals would certainly not survive. So also with the primitive mythical variation. It is well within the rights of the symbolising power. In both cases, if we saw it occur we should be compelled to infer and search out causes subtler, and perhaps more remote than the ordinary, for such an apparent freak. We should feel sure that such variation was somehow reversion to a very early type.[1]

Let us insist on the pressing necessity of the accustomed signs of bodily presence to a primitive mind, without legends or pre-perception of the 'spiritual.' How empty and vacant would be a ghost-chief who could not strike a visibly blood-drawing blow! How blank would be a ghost-mother who could not suckle her wailing child! Everywhere the 'instinct' would be to converge attention upon what resulted in familiar events.

The tentative becomes organised and habitual by meeting during many ages a satisfying response; the attempt to swim, to fly, to climb, to walk has always met with the same assent in resistance, support, etc. But the attempt to 'realise' a merely unseen or spiritual world must always have been defeated in the last resort by non-response, precisely as would be the attempt to fly in water, swim on earth, walk in air. Refusal, not consent, in every case must starve out the abortive efforts.

It is often said that the odd, the queer, the strange, draw attention: thus the ghost began. Yes; but one oddity would efface another, and no two are alike. Yet ghosts are alike—persistent, consistent, congruous; an 'odd' ghost would be suspected like any other oddity.

Of course, now that we have police and soldiers to

[1] See Note XIX., Appendix.

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protect us, we may safely t
in primitive days not only
ancient level of mind as
but mistakes, *e.g.* ghosts,
from the bogey which was
of the real lion.

Where the early mind (w
inarticulate) fails is in discri
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of expression. This last
end. If one of the two f
innumerable analogies ma
occurred to it. But the tr
ally through the living fram
response would not allow
speak us, and interpret us!
Man means. And so c
'symbolism.'

Was it the continuity, in
spine and hand as one 'n
simply animal realism in ex
chiromancy, divination, ar
express the supremacy of
rites like that of burying a
bridge or the wall of a tem
Life, as 'underlying' all hu
ritual form would be an ac
a deep instinct that men
'influenced'[1] by a Highe

[1] "A flowing in, and particula
planets; their vertue infused int
creatures" (Cotgrave, quoted in
edit. 1884).

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astrology would simply mean the sense of the dependence of the earth on cosmical conditions.

Let us suppose, however, that defunct ancestors, 'spiritual beings' of all sorts, and the notions we call animism, fetishism, shamanism, totemism, etc., were, as we suppose them to be, utterly unreal in every possible sense, having no basis in experience, and ranking with what we now call the mere figments of fancy. It follows that they had no business to assume the importance they did assume at so early a stage, since they lacked the consistency and consensus which they would have had if, like the pike's glass partition, they were persistently invariable in effect. Except on one supposition. That supposition (here tentatively made) is, that however grotesque and unreal in themselves, all such notions owed their power over the baby-mind of man to the fact that they were attempts to satisfy an original organic demand, by translation into expression, through rite and word, of facts generic to organic development.

What, then, are these facts? This, of course, is the ultimate question at issue into which we are not attempting to enter. It is only suggested that here come in two untouched questions: (1) How did we come by the curious idea (at once popular and philosophical) that mind is 'inward' and matter 'outward' in experience? Where and when did the connection between the 'subjective' or self-generated and 'internal' on the one hand, and between the 'objective' and 'external' on the other, start? Can we suppose it to be arbitrary? (We are always forgetting that what has now decayed into 'mere' metaphor brings with it a very ancient character of 'actual reality.') (2) How did we arrive at the absolute exclusion of what we call 'mind' from the category of 'energies'—vital and

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non-vital—which we owe to sources beyond the planet: in that sense 'external' and 'transcendent'?

When these questions have been taken up in the light of recent advances in psychology, it may be further asked whether the primitive readiness to admit the phantom to equal importance with 'solid object' may not hail from a yet more primordial era; and whether, being translated, it does not mean a natural allegiance to all which we call Motion, in contradistinction to all which we call Matter; in short, whether it was not due to baby efforts to put the 'dynamic' before the 'static'—to reverence 'unseen' power or force of whatever kind, rather than the lump of tangible 'stuff' which was moved thereby?[1] This tendency shows itself in the early stages or forms of language; the first 'words' always indicate motion, change, activity, and are what we now call verbs (are verb-al).

If so, it may be well, still in that light which we are only now beginning to acquire, to reconsider some of the current antitheses which furnish such endless and barren controversy. This of course cannot be done here.

[1] With reference to the human analogue of the pike's mysterious obstacle, experiences such as a sudden whirlwind, and still more the result of a naturally closed electric circuit, might have much the same effect on the primitive man as the glass on the pike. The undiscovered electric current may thus have been the remote instigator of the famous inference 'by the pricking of my thumbs, something evil this way comes'!

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CHAPTER XXIII

To re-state the question in other words: Does not everything we know point in the direction of underworking though obscure and little understood promptings of that part of our nature which is in most direct relation with the physical cosmos?

If so, a baby-mind with a baby-language just emerging from the gesture and 'yo-he-ho' stages, will be perpetually 'haunted' by a dim awareness of what it cannot yet translate into precise and correct proposition, or even into definite image. It fails and falls short; its dumb organic postulates have to grope for (literally) fitting expression. It will 'want' to express this or that in act or word, in grimace or speech, just as the baby first wants to sit up, then wants to crawl, then wants to walk and run—is always longing to do something which it comes short of doing well. But it is 'inwardly' (as we say) impelled to try and try, until it succeeds. By what? Reducing our answer to the lowest terms, we must presuppose some recurrent stimulus. And it is difficult to see where we are to draw the line short of the class of impulsion (or incitation) which we call 'inorganic.'

But if we go on to ask whether one would not expect the primitive mind to know how things actually go better than the mind which has become artificially complex without yet

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becoming really scientific (and therefore com
of course we are liable to be understood a
in the intellectual sense, which is plainly ri
is meant is, broadly speaking, the human a
what you like—of that subtle organic r
obvious phenomena shown by migratory, h
other like 'animal instincts'; especially
sensitiveness is shown to changes in natu
other) condition, which we are at best only
perfected instruments, to detect.

Even telepathy may be due to the subco
of those apparently lapsed 'senses' of a
Lord Avebury and others tell us, and which
still seem to survive in undisputed activity in
habitant of wild country, where a 'sense'
of the whereabouts of water, or of the appr
may directly conduce to the preservatio
would account for the preponderance o
telepathy among women and even children.
would, of course, be pre-rational, and wo
grotesque interpretation, which is what we

The plea that probably the really
'understood' natural fact better than we
fore be 'understood' as involving the use
a sense that will almost justify its extensi
root which 'knows' what to 'choose' ou
grows in.

Do we not need to ask afresh how
restraint or prescription as 'tribal laws' a
can we know what was in the earliest days
able way of correcting given groups of facts

Say that we begin with the primitive
powers' and consequent 'blunders': at a la

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it with imagining a 'tribal god.' But what a complex process we are surely thus supposing! Such imagination as the early mind is capable of must be as obvious and cost as little effort as the more literal 'image' on his retina of the tangible object in front of him. *E.g.* for him 'remembering' the charge of an elephant must mean the apparently spontaneous starting up of the 'image' of what has made a painful impression on, or has 'excited' or 'terrified' him. It gives him no trouble to construct. But the image, faint or vivid, 'comes up' right, because 'reality' is at work for him. The elephant does not represent itself as a wasp or a cobra. Only in one class of instances do we suppose that gratuitous (that is, grotesque and meaningless) confusion sets in.

To quote here a letter written in 1891 to Sir Leslie Stephen:—

"In a certain sense and to a certain extent I can honestly adopt your language, when you urge the ideas (1) that 'blunder' accompanies right mental development and is corrected 'as we go.' (2) That every theory the early man forms is 'better than none at all,' and does seem usefully to connect facts. (3) That in such a theory as a 'tribal god' he is representing to himself deeply important social truths which could only thus be realised or worked out; and (4) that what we find in the primitive thought-life is everywhere a 'step,' and may well constitute and not merely hamper, distort, or reverse a 'real progress.' All this finds much echo in (what I am pleased to call) my own thought. But then I feel that we have only thus opened the real ground where the answers grow. For 'theories' which were vaguely, crudely, roughly, broadly, true to natural fact so far as they went, would surely have served the primitive man's purpose better than the marvel-

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lously elaborate parodies which
laborious to carry out and to for
tion. Elaboration as well as
have to be accounted for.

Unless, indeed, we take the
deeper sense than is usually do
of all that was then most obviou
food, the fittest of the tribe, the
skill—was no waste at all. U
'blunder' and parody and all
down the stream of experience
of early 'conduct' than we have
whether much that seems most
in the most superficial and rela
so in that. Unless we ask whet
in our expressions of human pro
is to be the straight line which
distance between any early or l
(one fault which underlies Comte
at all events may ultimately
(relatively) ancient points in exp
us each time the spoils of a fo
begin again our 'spiral' journey

In considering accepted vie
belief we have to distinguish thr

(1) Object and shadow.

(2) Object and its reflection

[1] Here it might be said that voice an
Herbert Spencer's *Principles of Sociolog*

But that would land us in a different
whether the acute perceptions of the early
unseen to enemies and wild beasts, to
also every subtle tone and timbre of v
be taken in as is the civilised mind? It

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(3) The energy and matter, work-force and stuff of an object; its power to be useful and its tangible mass. All three contrasts are of course reflected in dream.

(1) Here there is complete distinctness, but the shadow has only outline given by obstructed light; an idea of content is given.

(2) Here we have reproduction in the flat or in the solid; *e.g.* in the mirror or in an artificial copy. The two are again inseparable.

(3) Here we can no longer separate or even distinguish except mentally. We cannot look at food-stuff or food-body on one side and food-shadow or food-soul on the other. You cannot take the ghostly feeding-power and leave the lump intact, as you can (in some sense) with shadow and reflection or image. We could, therefore, dedicate to the ghost the meat-shadow or meat-reflection or imitation-meat; but we could only dedicate the impalpable 'nourishment' of meat if we could isolate this last as we could the others.

So with the tool or weapon. But usage, loss of work-power, is shown by signs of wear. If the ghost-ancestor were so inconsistent and unpractical as to leave his proper sphere, to decline to use ghost-tools and weapons, or eat ghost-meals, and to take to using and consuming the energy of real ones, we should see signs of wear in the implements, while the food after use must have an unusual look, of which the natural analogue would be the waste product after assimilation. The savage would have an 'organised' expectation of this; would be prepared to wonder at its absence. We may ask whether the very consistency of the primitive mind

repetition in tone and word. Naturally the ghost-ancestor would be expected to answer in his own voice; and would, as in life, make his own remark, and not insanely repeat his interlocutor's.

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which,—a given start once made, a give
accepted,—tends to make it an easy victim
ence, would not here press the simple di
(*i.e.* tangible) things for real men, and shad
things, dream-things, for shadow-men ('sha
('ghosts'), dream-men. And as in very e
find attempts to produce vivid dream an
fasting, etc., would not that distinction be n
so that, for such a ghost, a man would try to
'visualise' something, and thus quiet or sat
appropriate gift, one the same in kind as
ghostly? Or at least should we not find
cautions to provide, with the object, its shad

The tool or weapon, etc. would be so p
if possible a perpetual shadow, or to
water which was never allowed to dry up,
metal, and so on. But that would not
the food. The test of food-consumptio
established in the 'structure' of the cons
be the disappearance, sudden or gradual,
sight, but from smell, taste, and touch,—of
when devoured. Some quite unique ch
naturally looked for, were it supposed that
the ghost (or good) of the food could be t
rest left.

Take a savage who wishes to devote, le
the buck that he has killed to the making
dead ancestors. The rest he keeps for
We will suppose that his theory is that
'ghostly' identity or double like his own,—t
the body at death,—and that it is this whic
when he eats, and which the ghost cons
dedicator cannot help observing, soone

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precisely the same result happens in the case of the devoted and undevoted food. If not consumed at once, in hot weather both will decompose in exactly the same manner; there will be no difference between the two. The ghost has taken the good of the one, no one has taken the good of the other. Then let him profanely eat (as, under stress of famine, must surely have sometimes happened), and the food is found to feed him still—the food-ghost has not been consumed!

On the other hand, he will observe that if the supposed 'soul' or spiritual double leaves his child or his enemy or his dog or the game he has been hunting, changes in appearance as well as in activity and attitude supervene at once. But no change takes place in the ancestors' dinner other than what takes place in his own, before he has absorbed its 'spirit' and felt the satisfactory result.

Again, take the case of arms and cooking utensils laid up (as well as perishable meals and dead wives and slaves) with a corpse. The savage, if he examined them from time to time, would find the instruments of whatever kind unworn but rusted; that is, exactly as he finds them when he returns after some expedition and they have been untouched in any way. Take them out and clean them, and you can use them just the same. Their 'spirit' or 'essence' is still there intact; no sign of lost force, no worn surface or chipped or blunted edge is found. And then the corn. It was to be planted in the garden or field of ghost-land. But any moment if you sow it you will find its life-content intact. The ghost has never used it!

Of course in one case the solution seems obvious. The ghost-chief wants a ghost-slave. Then let us kill one, and release the ghost to go to its master. But we do not thereby send his shadow or his reflection to ghost-land.

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His dead body continues to cast both. How
we jump to the conclusion (of which there is
the practical sphere) that the life-force, identi
are gone there? Why did they not take
shadow which had always been associated
reckoned in the same ghostly category?

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CHAPTER XXIV

BUT here we are confronted with the dream theory. The dead ancestor has been seen in dreams, therefore we are sure that he lives somehow and somewhere, and all the rest follows. Yet surely it would sometimes strike the immolators forcibly that it did not always follow that next time they dreamt the chief they dreamt the slave, to correspond with the new state of things. Dreams are not now and surely never can have been, as coherent, consistent, and invariably repeated in due logical and practical order as such an idea would require them to be.

Do we find anything to suggest that when a great chief died he was dreamt by the dreamers as alone and destitute, while after his funeral, with all its attendant ceremonies of provision, he was dreamt surrounded and provided as in life? If not, if (as would surely be natural) he was sometimes dreamt from the first as duly attended and fitted out; or appeared afterwards, in the caprice of dream, as alone and unprovided, would not this waste of precious property strike the men who had produced or acquired it at much cost of effort, and who had the strongest reasons for laying stress on its absence or presence in all the world they knew of?

The savage's digestive process, so far as he was occasionally conscious of it, would be his natural 'origin' of the 'inner.' Cultured man connects 'dreams' as he does

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'reflection' with an 'inner' which he has ac
physically—in an advanced mental stage.

But to the savage the dreams if not '
would only be 'inner' in the mucous mem
'digestive cavity' sense. And this sense of
'inner' may well be launched with us into
mind at its earliest stage, since as ectoderm a
it belongs to the first differentiation of the
Everywhere, therefore, touch, taste, and smell
tests by which a visual impression would
confusion averted, whether in the case of
spectral illusion. And we must once mo
one of the first traces one would expect to
reflex and automatic training would be an even
in the primitive mind than in ours, of the i
dream-events and objects. Our range of conc
widened that there is always a vague reservatio
in face of the strangest 'surprises.' The pos
multiplied. But, to the 'savage,' the utter di
distortion of events and objects of waking
dreams would have made it difficult to accept
—except so far as there was disorder of mi
more recent the emergence from the auton
'mind,' the stronger the mechanical eleme
inexorable the demand for the monotony
sequence. Is not this after all (in some sen
of the 'logical consistency' in primitive inf
Spencer, Tylor, and others point out? The
the child, is incapable of logic in a conscio
sense; but once started, his 'thoughts' arran
(by reason of a persisting tendency to rec
orders) in normal sequence.

Now dreams and delirium alike mean abnor

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and therefore would be less likely by the primitive mind than by ours, to be confounded with that real experience of which the secret is,—continuity.

It is at a later and higher stage, when the controlling power of conscious criticism has been correspondingly evolved (just as the physical sentinels, the protective organs, are evolved) that there is room for the acceptance of what is odd, and strange, and apparently chaotic: we generalise more broadly, and are prepared to allow for large margins of the possible.

Another question. The ghost left the chief's body as Breath. One can, of course, imagine that the simultaneous departure of the breaths of hero, wife, slave, might suggest a breath-community in a breath-world of which individual puffs or whiffs might make up wind. The smoke-columns of the funeral pyre might well be supposed to mingle as they were dissipated into the invisible before the very eyes of the sacrificers, and to turn into wind. Why then do we not find everywhere a supreme Wind-Deity, and a swinging fetish to represent the sacred breath-rhythm—and the heart-beat too?

It is commonly supposed that animals—notably dogs and horses—'see' apparitions of some kind invisible to human eyes. Stories pointing in this direction are familiar to most of us. But the question never seems to be asked, What are they supposed to see? The spectres of recently deceased dogs and horses, the doubles of living ones, or the wraith of some remote ancestor? And do they only see, or also hear—and above all smell them? Again, where in the animal world do we draw the line, if we accept such stories as evidence of a mysterious commerce with an invisible or supernatural world? Do bees ever see the ghost of a dead queen, and place food for her in a cell-temple, etc.? On the

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other hand, if animals are supposed to
does not this come under the questio
tion or influence (using both terms i
between man and the animals most
him? If so it would seem that th
studied to much purpose till pres
direction of what is called hypnotic
carried much further. Here we touc
'mental epidemics' in the whole ani
whether leading *e.g.* to wholesale mi
panic. Every extension of the know
tices and customs surviving even to th
emphasise the strangeness of cumber
tions, often found in cases where th
nature might specially be expected
inhibitive power, checking what tende

One more point. We have been
of the 'ghost of the ancestor' as th
marked off from any idea of a 'g
of course, this would falsify the be
and is indeed impracticable. As a
to draw any definite line between g
hero or tyrant, chief (and later king),

Professor Robertson Smith, for
that "the relation between the gods
worshippers was expressed in the
relationship, and this language w
figurative sense, but with strict lite
spoken of as father, and his worshi
the meaning was that the worshippe
stock, that he and they made up on
reciprocal family duties to one anot

[1] *The Religion of the Semites*, pp.

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act had a reference to the gods as well as to men, for the social body was not made up of men only, but of gods and men."

But as such a parentage could not be accepted on the same grounds as all other parentage known (since touch and smell were out of the question, and the main signs of physical reality were all missing), in what sense was the human relationship 'strictly literal'? How did gods and men make up a 'natural family' and a 'social body'?

This thought takes us far indeed from the dream, the shadow, the reflection, the echo, the breath. And one would like to be shown the link between the flesh and blood human family and the family of a god and his human offspring.

Our own spiritual ideal, the outcome of ever increasing powers of abstraction; our own comparative independence of the physical in ties of what we agree to call the highest affection and reverence; our very idea of mental intercommunion in any worthy sense, is the latest of thought products. But are we not constantly betrayed, even by the (little realised) ambiguity of modern language, into ascribing such ideas or their corollaries to the practical and sensuous primitive mind?

On what ground have we any right to do this? Once more, where and why do we suppose that early men broke away from the strongest ties they had—those to the actual, —and where are we to look for the link which bridges the chasm between the sensuous and the non-sensuous, which in early animism might well be spelt nonsens-uous? Do not all the theories hitherto advanced really imply that the primordial mind effaced all traces of its pre-intellectual ancestry, and bequeathed to the earliest of its descendants of whom we can find traces a practical *tabula rasa*? Do

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they not one and all involve the assumpti
men had to begin from the very begin
pressions of environment, instead of inhe
to right reaction or correspondence ingrai
protoplasmic days and in the protozoic nu
which had but to be carried over and utili
departure in development?

No wonder, if we could believe in s
this, that the most suicidal as well as grot
forms of cult should have prevailed a
merely or chiefly in theory, but in grim ar

But if we cannot believe this in the
whelming evidence of continuity throug
ascent, then the checking force would be
the follies (except in the case of disease
would not, except rarely, survive, or lea
likely to do so) would be stamped out as
or die out after a very brief reign.

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CHAPTER XXV

It cannot be too often repeated that only if what we vaguely call 'mind' has in its embryonic forms broken with its antecedents, can its acceptance (without demur, and as real) of the Unresistent, and of the fleshless, bloodless, weightless, warmthless, helpless, be accounted for. The 'associative memory' has failed the race; life has lost its way and is contentedly pursuing shadows, and reacting to echoes or reflections as though these were original realities. Night-dream and day-dream are then, of course, accepted also, without any sense either of lack or strangeness; they arouse the same interest and prompt the same conduct—whatever effort or cost involved—as if the conditions of what we call physical reality were all present. And it is impossible to deny that we do find, so far back as we have hitherto traced mind in man, this curious readiness, nay, eagerness, to welcome and persistently to act upon appeals that fail conspicuously in those very conditions of temperature and resistance (besides much else) which have formed the fundamental 'perceptual touchstone' throughout the organic ascent. It is even claimed by some that response to what is variously called the unseen, the spiritual, the supernatural, etc., is found among the higher animals. Be this as it may, once more we must ask whence the tendency which, once there and active, translated itself into such varied and

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yet on the whole such broadly sim
the development of the human m
Huxley and others warn us, it may
which is simply outlived, it may b
'instinct' which yet survives in
tendency so strong and firmly roote
direction, it will explode in anothe
sides, will act as a mental toxin a
And pessimism, leading to suicidal
to our ineradicable demand that
meaning and Suffering a purpose
we ourselves are constituted to q
to insist upon its answer; Man
of those 'problems' which he him
Nature. For it must never be for
so far as we know, has that ideal
protests against evil or pain, or th
judges of his own ignorance. The
neither that life and the world are
nor that they themselves are sur
insoluble problems, nor that they ar
long to know, nor that they might b
they are.

The whole question of the Primit
then, into one of trustworthiness. I
cultured mind always and in all t
than the elementary mind? Is it
of practical confidence, in the sense
us the mental equivalence of more ex
However far from the type of 'm
activity always nearer to this than
gence'? Or, in this last, may the
there obscurely survive even among

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reactions' which date from an extreme remoteness, and belong to the moment (whenever that may have been) of the advent of 'intelligence' itself—the point where neurosis acquired its new 'concomitant' psychosis? In any answer we give, the first thing we have to allow for is the artificial, the conventional, the sophisticated, the 'scholastic.' It is one of the glories of the scientific mind that it is resolutely learning to forswear all sophisms and plausible ingenuities, and become as a little child; so simply and frankly, indeed, that it is more and more impressing upon us the impossibility of entirely effacing the accreted inscriptions which our laboriously complex civilisation has deeply incised upon our 'minds.' Just as we have lately realised much more clearly than before the degree in which ancient Greek thought anticipated recent science,[1] so in time we may further realise that under the disguise of the ludicrous or the shocking, the crazy or the abominable, the primitive mind did the same.[2]

Thus it may even be possible that, while because of our immeasurable advance in power of test, we have gained enormously in accuracy of inference, we may in some directions have correspondingly lost in delicacy of perception, still more in our power of sub- or pre-conscious reaction

[1] Cf. *Philosophy of Greece*, by A. W. Benn, 1898; also *Greek Genius*, by Professor Theodor Gomperz, trans. by Laurie Magnus, 1901.

[2] And here it may be suggested that the enormous recent advance of the inductive habit of mind, the conspicuous development of impartial and self-correcting observation, of laborious and strictly tested experiment which we owe to the modern scientific spirit, might well be, on this hypothesis, naturally accounted for. We should see it as a true renascence, though in translated and transfigured form, of a really primitive tendency to see an even implacable, rigid order in 'nature,' and to reflect it in equally rigid custom; in taboos, or in burdensome or painful rites, in totem laws and magic formulas. As it is, one wonders how the scientific sanity of our own time can ever have been developed from such welters of the senseless as we suppose primitive minds to have been.

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to natural stimulus. Our adm
sense-functions seems to point th
certain that as yet no observat
savage and the child have been un
view, nor have those already taken b
(unconscious) witness to such a t
may run like a minutely delicate
plicated network of illusory fancies
stages of 'mind.' If in this conjec
are on a right track, it would follow
suggested, that all the fancies which
to 'matter' may represent a later and
stage of thought, while the earlier, as
at least undistinguished, may be descrip
relate to motion.

For this last is what we want. Langua
to be 'kinetic' in its first discernible fo
represented action, not object. Even
exceptions, the main symbolism of langua
we may be said to reach a real 'Metakinesi
and survives in the special form called
'intelligence,' 'mind,' and of which the am
terms shows that we as yet know so little,
are so laboriously discussed. Once more,
suggest a prehistoric, a primeval rudder—a m
a self-acting steering apparatus.

Of course we must be prepared to allow
coincidences. But in some cases the instan
may point, when put together, to something
may discern that we have been finding analog
might have found application. If this is so, the
element in the highest forms of intelligence—in the
critical activities of the typical modern intellect—

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certain cases render its inferences, its results, less instead of more trustworthy than those of the lower, sinking to the reflex, forms of 'intelligence.' 'Agnosticism' would be an instinctive confession of this. To walk by direct volition is a much more awkward process than to walk without thinking or willing it; and there are important activities on which we cannot bring will and intelligence to bear at all.

So also, may we not suspect, there are 'mental processes' best done or only to be done in the reflex fashion; when intellectual consciousness supervenes, it gradually interferes with and dislocates much of the smooth-fitting mechanism of 'response to stimulus' which Natural Selection has so fostered in its physical form, and which must have exercised so powerful a control on the early 'imagination.' In one form we shall all admit that we know it; self-conscious humility and modesty is immensely inferior to the 'automatic' form of these virtues!

It may then be suggested that while the sense-scheme of the primitive mind was for obvious reasons more exclusively dominant than it afterwards became, and may be supposed to have reacted to more subtle appeals from the various realms of nature (as to the spinal was added the specifically cerebral type of response), the meaning-scheme, now so highly developed, was still embryonic; while the element of Significance, as we now at least tacitly recognise it, was not yet assimilated. In other words, the primitive form of intelligence may be supposed to have been sensitive to certain modes of energy, modes which it was incited to translate somehow into cult of some kind and then into formal doctrine; just as it was impelled to translate the sense of hunger into the taking of food, and, in a higher stage, to translate the whole experience into articulate

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statement. Only, in this last class as life directly depended upon it, ha the case of the more indirect forms o was purely tentative, and was thus wrong. Even where its principle s in the highest scientific, and on t religious, poetical, or philosophical its earliest applications were repuls

This, however, would be, from just what we should expect to fi includes much which requires the sense to interpret rationally; and ness to the meaning, intent, pur experience, direct and indirect, —now become the recognition— import, the importance, the ultin moment of all experience and all k

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CHAPTER XXVI

If then we provisionally admit in a broad sense that there is evidence of the existence in the early mind of an element of healthy reaction to stimuli which we still translate into a far more refined, poetic, or reverent form inadequately termed 'spiritual,' and endow with supreme ethical value; what follows?

The term spiritual has become inadequate, not merely because it concerns life only and not mind (for which last the metaphors of air and breath as well as those of light and sight are needed), but because of the serious depreciation of its religious and philosophical value, altering all its associations. The world of which the primitive mind was presumably aware is, of course, included in that idea of a natural world which has now become one of an ordered world, a world of unbroken sequence and continuity—in short, of 'law.' But according to the scientific account of things, it would follow that there was presumably some 'real' stimulus to which baby man was doing his poor best to react and respond; and that our business is to employ every conceivable means so to increase and enrich our own powers of critical and constructive interpretation and translation, as to attain to worthier conceptions of this 'reality' than has yet been possible. For "I have yet many things to say unto you; but ye cannot bear them now."

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Can we pretend to be ready to bear them e
not, while we are content with incongruous
sion—once accordant, now discordant,—t
ideals, intellectual and ethical, to which our
and consciences bow in what we know to be c
and which appeal alike to the noblest and
men in all the human world. Here we
question which must precede any effort to
ground of experience by rectifying a virt
and therefore vitiating scheme of ideas.
human query?

The phrase is, of course, used in a
We are not thinking of an articulate que
inquiring attitude, an active asking, a que
We are proposing to ask what, in the first
forms of curiosity which are undoubtedly
or less degree by the whole animal worl
those which, gradually taking on the chara
wonder, are recognised by us as distinctiv
the outset, however, it must be understo
gap nor barrier—except in the sense of dis
assumed. So far as any analogy serves, w
of the stage in the development of the ver
the notochord may first rightly be called a

What then may be safely reckoned as
human queries—carried on, indeed, into
development, but not specially characte
intelligence? Is there not obviously, to st
which our word 'what' stands? Attenti
by movements, or by object, incident or ob
scious organism responds. The reaction i
the words, What is this? food? danger? e
Which (this or that) and Where (here or

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or Whither. And then follow, Whether to exert itself, and How to reach, to capture, to escape, and so on.

A question here arises which seems as yet difficult to settle. Does the animal ask 'when'? Has it a time-sense as it certainly has a sense of locality, the same in kind as our own? Leaving this as possibly belonging to a borderland in the query world, and certainly needing separate discussion,[1] we come to a significant moment.

It seems reasonable to assume that the animal *qua* animal cannot be said to ask Why. Why indeed should it? The only sense in which such an inquiry on the animal level would not be a mental irrelevance, would be that of an extended What or How. When a search for food or the construction of a nest had failed, and the animal or its offspring were consequently suffering, we might urge that the reason for, if not the cause of, the failure was sought; that the animal in asking, What was wrong? How had things gone wrong? virtually asked the 'reason why,' and proceeded to try again in new directions or with fresh materials.

But this would surely be a far-fetched use of the word. What the animal needs is to find out simply *what* is wrong. How can things be set straight, hunger appeased, eggs safely laid, or young properly sheltered and nourished? Such queries as, Why is there nothing to eat? Why do I suffer? Why is this district barren? Why is the nest or burrow destroyed? or, Why has it collapsed?—still more, Why am I dependent on food or shelter? and Why should I seek for the one or make the other, or care for the needs

[1] Since this was written, 'time' as derived and inferential (space and motion being the originating factors) has been made the subject of a Study not included in this volume. The suggestion seems justified by the fact (which does not seem to have been noticed) that 'time' is the only category of which the terms are all borrowed. An answer to this question would thus be supplied.

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of another generation and other
beyond the range of the needs, ar
the animal. Indeed, they at once
region, and suggest more directly
conscious identity. Even if it
justly—that in some cases anima
and trained by man, show these si
instance, man acts as he does, this
of a predictive mental activity,—
Some biologists, *e.g.* Ralph of Lei
of this kind, and maintain that
by the organism in its progress i
again strives to pass. The organi
normally, but to develop new nee

Thus the first distinctively hu
Man might fairly be called the
reason for everything: that is, no
meaning in all that happens and
experiences. What he does has
why'; he is humanly intelligent,
human, in proportion as he desire
and know it. Man has called hi
given nicknames, the cooking a
does not live in order to feed, but
to learn with his developing brain
ing, and much else. The ques
mean?' takes on the sense of '
grown, so to speak, a mental feele
tip wherewith he explores his wor

[1] Critical Notice of *Biologische Pro*
April 1885, p. 282.

[2] "Man only knows the Why, not the
teenth Century, September 1896, p. 452).
See also Note XX., Appendix.

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the entrance into that region of abstract conception which reacts upon, and endows with new value, the world of perception and action. More than that, it means the interpretation of this, the perception of its significance. The 'whats' of the animal acquire more and more general senses and an immensely wider scope.

What then may be called the pre-human query, which yet marks the most conspicuous human intellectual development of the present day—the historical and scientific? Is it not, *How* have things come about? If so, we have reached a suggestive idea. No one will deny that the tendency of positive modern thought, in reaction from the speculative development in which the Why-Asker overreached himself and forfeited his answers, is to forbid us two things: (*a*) The assumption of conscious or deliberate purpose in nature; and (*b*) The asking of why, or the reason why, except of course in a proximate, concrete, or practical sense. We are free to ask how things come to pass as well as what things are for us; but we inherit the animal's limitation which forbids further exploration. And at times this restriction, although belonging to the less than human, may well do us inestimable though humbling service. It may be needed as a sort of storage of force, some day to be used with unlooked-for effect.

Is this after all so terrible a deprivation as we are apt to suppose? Until our thinking and thus our modes of speech have been far more effectually purged of false or mistaken associations than is yet possible; until the patience of science and history, of investigation and criticism, has had a yet more perfect work in changing or reversing, or at least severely testing, starting-points which we inherit from ages of unrestrained guessing (or arbitrary dogmatising), may we not confidently and even gladly forgo for a while terms like

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Purpose and Design, if only we
upon such terms as Purport and I
not suggest carpenter or watchn
while they do lead us on to the
ultimate warrant for brain-work
reflect or reason upon, to thin
senseless. Strike out meaning fr
speech itself becomes an imp
research is sheer and preposterou
of the scientific rebuke of barre
speculation is ultimately unmea
nothing. The most uncompron
dealing with what he conceives t
the nature and value, the 'mome

But more than this. The H
what way? by what methods? th
this brings us to that way through
advance thus expressed, reaches
cance and the power of its interp
to this thought later.

To give up asking why, then,
up being fully human. Even if,
of the words, symbolism and si
range of the animal, Man has
world, an insignificant life. The
give a practically senseless result
in such a view.

For humanity, what has no i
what does not signify is nothing
like playing upon words? The
current use of terms like 'signi
lesson for us. To play with lang
are dealing with facts; to work

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thing. The former we may do when we least suspect it; the latter may be rarer than we think. Real work with words may yet bring us into clearer mutual understanding than at present seems possible.

The very question we are asking owes much of its difficulty and apparent obscurity to the varying senses and applications of our query-words. The line of demarcation between 'why' and 'how,' for instance, is not always as sharply drawn as we are apt to suppose. Taking one of the most recent manuals of logic, Professor Minto's, we find it laid down that "Science aims at reaching 'the causes of things'; it tries to penetrate behind observed uniformities to the explanation of them. In fact, as long as a science consists only of observed uniformities, as long as it is in the empirical stage, it is a science only by courtesy. Astronomy was in this stage before the discovery of the Law of Gravitation. Medicine is merely empirical as long as its practice rests upon such generalisations as that quinine cures ague, without knowing *why*. It is true that this explanation may consist only in the discovery of a higher or deeper uniformity, a more recondite law of connection; the point is that these deeper laws are not always open to observation, and that the method of reaching them is not merely observing and recording."[1] Probably the word 'why' ought here to be 'how.' Yet this is a case of typically accurate writing. One often comes upon passages like this:— . . . "*how* it is that molecular changes in the brain cells coincide with modifications of consciousness; *how*, for instance, the vibrations of light falling on the retina excite the modification of consciousness termed a visual sensation, is a problem which cannot be solved."[2] This is surely a case

[1] *Logic, Inductive and Deductive*, p. 268 (1893).
[2] *The Functions of the Brain*, Ferrier, p. 255 (1876).

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both of Why and How. And
carefully edited recent translat
Creation, that Darwin's Theory
the different species of organism
simplest primary forms."[1] H
be '*how*.'[2]

Again, Professor Karl Pears
that "science answers no *why*
express the problem and the r
'*why* space seems the same
more precisely to ask '*why* y
alike,'"[4] and "'*why* should mer
of science?' The answer is cl

Professor Sully reminds us t
year a child is wont to perpl
why of everything. He now
ring for a purpose, and can on
as they present some analogy to
In other words, the child fr
vindicates the human instinct t

Of course there is a futile
an insane How and even a
a thing as a 'questioning m
condition, characterised by co
tionings as to the origin and
small." Griesinger tells us
symptom was a kind of morb
secure, at any expense of tim
accuracy in the most trivial thi

[1] Vol. i. pp. 124 and 15
[2] (Italics mine: V. W.)
[3] *The Grammar of Scien*
[4] *Ibid.* p. 187.
[5] *Outlines of Psychology*,

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began the questioning, and was speedily in a labyrinth of problems, the solution of which he felt compelled to attempt, although conscious of its impossibility."[1]

But this tells just as strongly against the exclusive devotion and attention to detail into which all scientific research is liable to degenerate, especially in these days of unbridled specialism. And Sir Leslie Stephen does us good service in exposing the true source of much ostentatious repudiation of the question why. "There is nothing, as every schoolmaster knows, which the average mind resents so much as the demand for reasons. It will gladly accept any rule, provided that it has not to answer the troublesome question, Why? Tell me how to answer; but, for heaven's sake! don't explain the reasons of the answer. We are sometimes told that men of science have to encounter the natural desire of mankind to extend the limits of knowledge. That seems to me to be an inversion of the truth. What a man naturally desires is to put a fixed stop to inquiry. . . . We want a world limited in every direction; we desire to lay down definite bounds to the labour of investigation; and we make our limits by an arbitrary hypothesis. . . . To ask why is to be not only impertinent but profane."[2] But Sir Leslie here forgets to tell us that this is dead against the whole trend of biological development. From the primitive tentacle, even from the root and tendril to the little child's hand, exploration, the acted question, dominates the whole organic series. In the normal young child's brain this translates itself into explorative ideas, and passes through the What and the How to the Why. Then comes the heavy hand of the elder who has himself had the Why-asking instinct, not developed and trained, but

[1] "The Questioning Mania," W. R. Gowers, *Mind*, July 1876, p. 413.
[2] *An Agnostic's Apology*, pp. 323-24-25 (1893).

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dulled and blunted by what we now call elementary education, and by the artificial repulsion from research which Sir Leslie so well describes. There are few things more striking to the careful observer than the indomitable and unwearying perseverance of the baby and the little child in (what the adult would call) the drudgery of acquiring first muscular dexterity and then the use of speech.

Over and over again, day after day, it repeats its arduous exercises, needing no extraneous prompting. Its self-imposed muscular lessons,—first in raising its head, then in sitting up, then in crawling, lastly in walking and standing, with all the subsidiary movements of hands, feet, face, eyes, etc.—are of course mainly involuntary. But its strenuous devotion to the acquisition of speech belongs to the stage of brain development in its higher forms, which education by its elders ought to continue and complete on the same lines. The normal child will be heard murmuring words or sentences to itself with untiring reiteration; endless exercises in discovering their use and meaning follow. The very absurdity of its attempts to utilise its new resources shows how absorbing is their interest. And that interest grows rather than slackens till the stage of the Why is reached. But then begins a woeful change. From the earliest nursery training the secret of willing and glad application seems to be lost, and the child has to be persuaded and even urged to do what it now learns to hate under the name of 'lessons.' When this pressure is reversed we may indeed hope for great things.

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CHAPTER XXVII

To give up asking Why, then, is to give up being fully human. Yes. But let us make up our minds that the true answers to our most vital Whys can only come through a long, stern, searching discipline of unanswered question. We have first to learn What and How to ask, and thus also Why we do ask and must ask. Man must win his patient way through a world of baffling problems, all pressing for solution, and yet apparently insoluble. A strange paradox, until we suspect that here we touch after all the very stimulus which has helped to make man's mental supremacy. Even the very quest for answer leaves his brain, metaphorically speaking, the stronger and the abler; his controlling and creative power greater than it was before. Better, from this point of view, even misdirected curiosity and wonder than none at all.[1] Children often ask a ques-

[1] The mischievous absurdity of the general attitude on this question is well represented by the following extract from the *Outlook* (Feb. 8, 1902):—"A member of Parliament asks as many questions as does an inquiring child, and they are apparently just as unanswerable. 'Mother, why?' is a favourite question with all children. A harassed friend of mine, who was as worn out with endeavours to satisfy the queries of her family as Mr. Brodrick is of solving the riddles propounded to him in the House, found refuge at last in the uncontrovertible statement 'Because.' Infantine curiosity for a time accepted this solution as profound and satisfying; but, alas! the day came when the inquiring mind took to saying, 'Because why, mother?'"

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tion and do not wait for the answer, or else forget it the next moment. But the effort has not been wasted.

It seems to follow that the assiduous devotion of modern thought to the 'How' is not only one of the most healthy, but one of the most hopeful of signs for our intellectual and spiritual future. We are rightly asking how all that we find in the world around us or in our own minds has grown up or come to pass; how things develop and work, grow and decay, succeed and fail, are made, changed, destroyed, regenerated or reconstructed; and, not least, how we learn these and kindred facts. We must be historical before we can be predictive, must carefully trace the intricacies of process, the elaborations of development, before we can understand and forecast the result. We must collect, test, relate, and combine our facts before we can interpret them. Man's tendency to push out and explore beyond every limit in turn must be balanced by the tendency to analyse the minutest of details. He must be content, for the sake of a more profitable advance, to re-learn the elements of human experience; and to take up over and over again not merely the standpoints of the growing child's mind, but those which he clearly shares with the sub-human animal. And this is true of individual as well as of racial development.

This suggests the reason why education has for so long tended to lay all its stress on accumulating and memorising a mass of information; on providing the student with a store of already acquired and digested knowledge, historical and other, failing which he is called ignorant or a dunce, and is supposed to be uneducated. It can hardly be doubted that this tendency is due to the recognition of stored knowledge as the indispensable means of utilising the results of research, exploration, and inquiry generally. It is undoubtedly man's characteristic power to accumulate the intellectual

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and moral treasure which makes his What, his How, his Why, and finally his Who, no idle questions, dying down as they arise and before they can be answered, but a true seeking of light wherein each attained discovery suggests and makes possible the next. But in education this storing power has been allowed to numb, almost to kill out the Why, —the seeking, questioning, and (except in physical science) the observing and investigating power,—until the average man is no longer interested either in that or in any knowledge beyond what actually brings him comfort or pleasure. It is curious here to note that the questioning spirit which medieval theology found so inconvenient has been branded with the scarlet letter of Scepticism, so that the mere fact of question which would put any established 'orthodoxy' to fresh test is treated by many as wrong-doing.

Yet the average child is intensely interested both in question and in knowledge; and especially in exploration, which, balked in the natural and fertile form, is of course liable to take destructive forms. Thus the crying need is to restore this experimental instinct to its true place in our training scheme; to encourage a healthy questioning and a healthy search for the answer, since this cannot but assure a corresponding thirst for knowledge in the true sense, which reacts upon and rectifies the moral ideal.

Thus alone can we hope to rise from a forlorn hope of resistance to the 'cosmic process'—a Partington's mop for the cosmic ocean—to victory through interpretation. When we learn, through diligently asking our Whats and Hows, our Wheres and Whens, etc., what Whys to ask and How rightly to ask them, then indeed new worlds of possible answer open before our eyes. What had seemed hopelessly transcendent, ultimate, even 'absolutely' unknowable, may then prove to be far short of any such inaccessible

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region; to be nearer and perhaps more intimately ours than we had suspected. We may sometimes, like the mother unconsciously hugging her baby in the burning house, be searching far and wide for what is in our very grasp.

For again our Why, reached and interpreted thus, earns for us a yet higher query, Who. How often in these days our personal questions, Who am I? Who art thou? Who are we? seem to evoke but a dreary echo—Who? In reaction, again, from the off-hand or dogmatic certainties of earlier speculative and mystical introspection, we wonder whether What are we? is not a truer or at any rate safer question than Who are we? The ego, if not the self, has a baffling or an empty sound to us. Or we transfer all such ideas to the sphere of emotion, and say that we feel our own identity, and leave the subtleties of its discussion to the interminable metaphysician!

Perhaps here, too, the discipline of conscious reversion to a lower stage of experience may be needed. Our ideas of personality may be overlain and obscured by mistaken inference, mistranslated feeling and instincts. At present there is much to be done before we can hope to unravel even the simplest of the apparently tangled webs of adult experience; to translate the facts of life rightly, and make them yield a harvest of living significance. May we not say that when man has reached a further stage in this essentially human work, he may rightfully claim his human prerogative to ask Why? Will he not discover that his very helplessness so far to solve the enigmas of life, to interpret and thus control what he sees as evil, to bring about a higher standard and level of organic, ethical, intellectual life, is profoundly significant in an unexpected sense? Does it not belong to the stage which he is outgrowing in the very act of protesting that an ultimate Why

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or Who must not now be asked, or answer hoped for? This question, however we may answer it, cannot fail to react powerfully on our ethical ideas, and thus on conduct itself, convicting both, it may be, of the need of some revision.

At all events, to ask What can never be an unprofitable question: we do well, are even bound, to inquire what is the first human query. Supposing this query to be Why? then man has been and is gradually learning how he asks it from the historians of mythology and philosophy, from the philologist, and in a special sense from the experimental psychologist. But the one ultimate Why which, because he is human, he not only may, but must ask, is, *why he asks it.*

This, however, carries us a long way. At present our concern is with the very first steps of so momentous a journey. And these, it is surely obvious, must be taken on the road of education. There is now a marked tendency among psychologists to stimulate the accurate observation of children and their ways. Hitherto the difficulty has been, that what we assume to be a child's natural ideas are often really his attempts to adapt himself to those of his elders. Children, by the very necessities of the case, are such inveterate and often unconscious imitators! Probably, as we learn better how to allow for this, we shall surprise more really primitive and original characteristics in children than we now suspect to exist. When women, who are nearer to and understand children better than most men, are, in the sense here suggested, significantly trained to observe children and to distinguish between their imitative and their original or spontaneous impulses, we may learn more about the genesis of the Why and the Who than so far has seemed possible.

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To sum up: the most natural and spontaneous tendency in man is the tendency to search out, to explore, to master the unknown; and the unknown in this case is the very reason and value of his being. The systematic training of this tendency will alone reveal the answer to such ultimate questions as why man asks Why.[1]

[1] Since the above was written, I have found in Aristotle's criticism of the earlier Greek views of 'cause' (*Met.* i. 3), what is apparently an interesting parallel to the genetic development of the Question-series here traced. In a passage kindly translated for me by Sir Arthur Hort, Aristotle says: "And the causes which we assign are fourfold: one cause we declare to be the Essence (Formal Cause) or the What is it? (for the Why in the last resort comes under the Principle (Differentia) and the Why is above all things a Cause and a First Principle). And the second is the Matter (Material Cause) or Substance. And the third is that whence comes the origin of Motion. And the Fourth is the cause which answers to this last, viz. the 'on account of which' or the Good: for this is the end of Generation and Motion."

Here Aristotle makes the Why start, as well as crown, the ascending series. From our present standpoint this may readily be admitted in the sense that the Why is potential in all question, though it is the last to become definitely articulate. The What designates the quality and gives us the name. But the Formal and Efficient may surely be included under the How: 'this or that idea or object is *formed* thus': or, 'it acts in this way or by that means and in that manner.' Then the last, also implicitly the first, becomes the fully conscious Why and Wherefore, to which the answer should give, in the higher sense, the significance of all Expression, including that which we generalise under the term phenomenon or appearance. Though it cannot here be dealt with, the far-reaching significance of this last inclusion, in relation to discussions on appearance and reality, will be manifest.

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CHAPTER XXVIII

GRANTED, then, that an advance in our powers of expression, an enrichment of the resources of language, a greater mastery of significance, clearer apprehension of needless obstacles to mutual understanding, more effective consensus in all these directions is desirable: how are we to begin? The difficulty is that hitherto every one who has been at all alive to the serious consequences of our present lack of mutual understanding has thought of it almost exclusively from the point of view of the inconvenience resulting from diversity in civilised languages. Many proposals or suggestions have been made for the acquisition of an universal language; and even now the adoption of neo-Latin as a common language for philosophical as well as scientific purposes is being urged as meeting a crying need. But I venture to suggest that, except in a limited sense or as a temporary expedient, that would be beginning at the wrong end.[1]

[1] The latest proposal of the kind—Sir F. Bramwell's—well illustrates this contention. As the *Times* (April 4, 1902) truly says, his scheme for "the adoption of a common language for intercourse between civilised nations," which is to be preferably Italian, is impracticable and fantastic. But the dogma that English, as we now know it, is to become the common language of the world is also shown to be unsound. Both Latin and French seemed once destined to become practically universal. And we must not ignore the undeveloped language-groups like the Sclavonic and that which includes Chinese. The true 'common language' of the future

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For even if the whole civilised—or intelligent—world could be brought by means of some great international movement to unite in the formation and consent to the use of such a language,—whether an old language adapted or a new one constructed,—it could at best but touch the surface of the question, and might indeed easily tend, by engendering content with unworthy ideals, still further to hamper and discourage that development of linguistic resources for which at present the very variety of tongues and dialects must indirectly make.[1] Many 'ways of putting it,' ancient and modern, are at least now at man's disposal. With an artificially introduced and sanctioned universal language, imposed upon us at our present stage of linguistic development, much of this precious psychological heritage would wither and be wasted and lost. It may be that the world cannot do without that opulence of distinction in idiom which makes for richness in human life as a whole. This opulence arises from and issues in differences of practice, themselves valuable as providing the means of dealing in various ways with the emergencies of the future. The problem surely is, how to keep this priceless treasure without allowing it either to divide us, or to silence that which, being everywhere the highest thought of the highest man, is most of all worthy of expression.

Let us suppose, then, that our parents, and therefore we ourselves, had been brought up to recognise the crucial importance of preserving and utilising all which in language makes for (1) convenience and economy; (2) lucidity, grace, melody, dignity, beauty; (3) power to express what

—so far as one can be used at all—will not be artificially foisted on the present system of education: it will be a spontaneous and thus really effective product of that change of educational standpoint and aim which the method of 'significs' involves. See Note XXI., Appendix.

[1] G. Moore's "Soul of Ireland," *Nineteenth Century*, February 1901.

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now seems beyond expression both in range and complexity of constituent and distinction. Let us suppose, further, that two generations, as a matter of course, had been taught from their earliest years that it was morally wrong, socially impossible, and practically idiotic, to make anything but the very most of all existing means of expression. Let us suppose, also, that we had thus been taught the true place and value of the sense of things (their appeal to us), the meaning of things (their intention, if any), the significance of things (their moment, their importance to us). Let us further suppose that this typically significant triad, on which all action as well as all knowledge depended, was clearly seen by all as most of all worthy of concentrated attention and interest: what difference would this have made?

We must remember that while the appeal to the matter-of-fact character would have told on the side of economy, of simplicity, and of efficiency—the attraction being, in fact, the doing most at least cost, doing it most thoroughly with most useful results—the appeal to the imaginative character would have told on the side of truer conception, whether abstract or pictorial, whether ethical or artistic, whether making for truth, goodness, or beauty. The prosaic type would have seen the point best on the economical, the 'least trouble most result' side, as a question of success or failure, praise or reproof, reward or punishment. The imaginative or emotional type would have seen the iniquity and folly of crippling or mutilating the most precious of its gifts, of starving instead of fostering a really vital energy. All alike would by this time have contributed abundantly to our store. For the whole mental atmosphere and attitude of a generation thus trained from the very beginning of life would be altered. Its centre of gravity would be changed. Its world would also at once be expanded; the area of the common

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interest enlarged and concentrated, the value of life revealed and enhanced.

Such a generation would find in its hand the key to problems which now, in fact, for lack of thought expressive enough to be fully predictive or prophetic, cannot adequately be interpreted. It would find in a pregnant simplicity, now lost in a futile elaboration, the secrets which master death and give a new empire to the life reached through truth.

We know now that witchcraft is practically suggestion. You believe you are bewitched, and so you pine away. So with pessimism, the witchcraft of philosophy. You believe that all is bad and hopeless, and it becomes so. On the other hand, the wildest optimism has the merit—an unspeakable one—of bringing about what it hopes for, just as pessimism brings about what it fears.

It is the same in education. If you start daunted, or become daunted by 'disillusion' or disappointment, of course the child will not be 'interested.' Children are sensitive to suggestion. Reiterate the glad tidings of hope. This is what the Gospel is—the Supreme Suggestion.

Let us then consider how the teacher of the future, himself thus trained, can accomplish this transfiguration of study.[1] At present the child's natural interest in and control over language is by direct and indirect means systematically blunted, especially by the premature teaching of formal grammar; while his typical instinct, that of asking for the reason of things, of putting the question Why, is not sufficiently recognised as the keynote of true education as of true mental growth.[2]

[1] See Note XXII., Appendix.

[2] The evidence of this is happily now being brought forward on every side. The difficulty, as usual, is to select from the chorus. In an article

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The necessity for social consensus (which in the really most important directions we are impotent to secure) is pressed to the uttermost as a reason for the merely customary. We waste the often valuable innovations or corrections of current fashions of speech unconsciously made by children. These are merely received and recorded in shouts of laughter, so that the children are careful never to repeat them. But in

on Educational Reform (September 5, 1901) the *Times* says: "We are crying out in all directions for something, we hardly know what. . . . We have prided ourselves, not without reason, upon the practical qualities of our race, and have cared little for mental training; and now we discover, through the inexorable logic of fact and the pressure of competitors in fields where once we had no rival, that these practical qualities need supplementing and sharpening by that very education that we have affected to despise." Reformers need the driving power of popular interest. "We are convinced," said the Commissioners of 1868 at the close of their report, "that it is vain to expect thoroughly to educate the people of this country except by gradually inducing them to educate themselves. Those who have studied the subject may supply the best guidance, and Parliament may be persuaded to make laws in accordance with their advice. But the real force, whereby the work is to be done, must come from the people." It is true that "we must work out our educational salvation in our own way." "Our men know how to do their work," said an English manufacturer, "but they don't know why they do it." Exactly. The mere Whats and Hows are stuffed in, and the Whys are left out. And then we wonder at our national stupidity, especially when it issues in intellectual as well as practical sterility and apathy. To *Nature* the country owes a debt of gratitude for having persistently called attention to the cruel waste of power going on not only in the scientific, but in the whole social world. In an article on the "Teaching of Physiology" reprinted in its pages (February 28, 1901), Professor W. T. Porter says, "Too often in our medical schools information is mistaken for knowledge. Only knowledge is power. The getting of mere information wastes the student's time. The vast accumulations of centuries of medical study confuse the undisciplined mind and crush the spirit. The burden of fact which any man can bear is relatively small, and each year grows relatively smaller. To find new truths and to look undismayed upon the old is the perfect fruit of education."

A review by Dr. B. Moore of the same author's "Introduction to Physiology" (*Nature*, July 25, 1901) strikes the same note: "The weary

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time we shall begin to see that the child may not merely contribute to a truer psychology, but also to a more significant philosophy than any we yet dream of. Only first we must put into his hands the power to understand the value of what we call 'meaning'; we must 'educate' in the fullest sense of the word; we must aim at bringing out and thus expressing treasures of human nature now hidden in helpless silence or ineffectual talk, or in the shy reserve intensified by dread of the snubbing process.[1]

The result of pressing home all forms of knowledge in an appeal to sense, meaning, and significance, is an enormous

brain (of the British student) has been enslaved at unpalatable task-work all the two years, grinding up, at the same time, all four of these important subjects so that he may make answer to stock questions upon them at examination time. . . . When we introduce a rational system of studying these subjects, which will teach our students to think, to examine critically the work done by others who have gone before them, and to make attempts to proceed farther by themselves, a new era will dawn in which students will take an interest in their work, and will rejoice in knowing that they will be judged on what they have been doing throughout their course, and not upon the extent to which they have impaired their memories and intellects by merely memorising the opinions of other men from their text-books and lectures." For the sake of what are virtually intellectual weeds, "we arrange a system which chokes out, or does the best that can be imagined to choke out, our choicest flowers. This furnishes a sufficient clue to the well-known observation that our men of highest genius in the past have often been those that the schools rejected, or found no occasion to honour." See Note XXIII., Appendix.

[1] Since writing this, an article by 'Linesman' has appeared in the *Spectator* (February 8, 1902), which, though it only applies to the Army, expresses exactly what is here meant. 'Linesman' speaks of the soldier (including of course the officer) as 'miraculous material,' and as one who "carries within him the force to do with manipulation ten times what he does neglected—to think, instructed, with an astuteness of which, untaught, no gleam has been shown to the casual observer—the force to be, in fact, the ten times better soldier he must be to cope with the tenfold work which confronts him. Economise and mature this force, teach the men it informs how to perfect and apply it," and the work will be done. See also Note XXIV., Appendix.

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development of the child's power of appreciating and using distinction, and of avoiding confusion and fallacy. The child is also helped by the use of a principle of Translation by which the 'common denominator' of all the subjects learnt, however diverse, may be discovered, so that within varying limits each may illustrate the other. The appeal to the child's expression-power will always make for that pictorial road to the abstract which is natural to the young mind. It must be remembered that the child's mind begins with the generic (*e.g.* all men are at first 'Daddy'), which might, perhaps, be called the mother of the abstract.[1]

The instinct which prompts the typical child to ask Why at every turn would thus for the first time be fully worked upon. We should at last touch his natural tendency to seek a 'because' for everything—to link together all parts of his growing experience. As all fun and chaff, no less than all wit and humour, depend on turns either of sense or meaning or significance; as the ludicrous depends on the incongruous, and our sense of the incongruous depends on the strength of our mastery of the congruous, this method of education would lend itself, as no other could attempt to do, to the child's craving to be interested, excited, even amused in learning. Then we should see in 'brain-work' an unbroken continuity from that marvellous, untiring, intelligent 'nerve-work' which gradually perfects the organic activities.[2] And this natural brain-work entirely

[1] The systematic study of the child's (and of early man's) 'art,' of his mode of reproducing objects, has brought out the little understood fact that, as Professor Sully remarks (*Studies of Childhood*, p. 369; 1895), the "transition to the representation of action marks the substitution of a more realistic concrete treatment for the early abstract symbolic treatment." As yet we treat the symbolic and the abstract as last in the mental ascent!

[2] The one most notable achievement affecting us all alike, of that 'Signific' power which has never yet been consciously and systematically

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takes the sting out of monotony, even out of drudgery. As we have seen, the young child faces both with undaunted perseverance in its natural process of acquiring and extending both vocabulary and sentence-form.

A good example of the practical value of the Significs method in education is supplied in an article on 'British Industry' by Mr. R. Neville.[1] He says: "The problem is how to change the mental attitude of the working man. How to insure his interest in his work, and to incite him to put forth his full powers." Our present methods of education may or may not permanently store the pupil's mind with a number of facts; it certainly does not necessarily increase his perception of the value of work and of the meaning of taking pains and trouble; it does not give him the common-sense 'worth whileness' of things which otherwise seem hard, seem things to be shirked. "Yet in truth," he proceeds, "this incentive to exertion must in some be supplied; without it all the preaching in the world will be without effect." But he concludes: "The fatal weakness in all proposals for reform of which we hear to-day is that they are content to deal with symptoms, and leave unsought and unremedied the cause of the social ills they undertake to alleviate. Even in a case like the present, where the cause stands plainly in view, the last thing thought of is to attempt to deal with it. On all hands it is ignored or explained away. It is quite useless to complain that things are as they are, unless we are prepared to alter the conditions that made them so."

Yes; when, instead of giving him ready-made answers

cultivated, is the endowment of 'printed matter' with the living energies of speech. The child should be shown how great a result this is—how much he has already tried to add, and how far he has already tried to penetrate in this case.

[1] *Monthly Review*, February 1902.

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or none, we have learnt to take up nature's plan, and thus shown every child at school how to discover these Whys of hard work and good conduct for which from the first he has normally thirsted; when we have made it a duty on his part (instead of a distracting luxury) to hunt for reasons, to look through the that and the what to the how and the why,—we may reap an unexpected practical harvest.[1] For to work and to ask; to do and to inquire; to see why he should learn, and how he shall succeed, and what success ought to signify to him,—these very things are already his deepest instincts. They only need translating. And when men have learnt to translate them into conscious and voluntary action, then 'reform,' industrial or other, will assume a different aspect in their eyes; it will appeal to all in a different way from any now possible. We shall have learnt to respond to the 'next higher' in social development exactly as the baby responds to the call to

[1] "Perhaps the most marvellous exhibition of memory is that displayed by players of blindfold chess; but who would select a man, because he was an expert in this science, to conduct a business? In regard to the claim of development of reasoning powers, it may be that the absolute reverse is the truth, and to learn by rote things that have no meaning to the learner is possibly the surest way to stunt the intellect. The most valuable intellectual gift a man can possess—I speak with all deference, not as an educationist, but as an engineer—is the power of concentrating his mind on the problem immediately before him; and the learning of meaningless or objectless things—they need only be meaningless or objectless to the learner—is the surest way to cultivate a discursive mental habit. Let any one who doubts this watch an average schoolboy getting by rote a Greek verb, or any other lesson equally empirical. The most trifling incident will distract his attention, and that not from wilfulness, for the penalty of not knowing his lesson has many real terrors. Educational methods, I know, have improved and are still improving in this country, but when all is said, I attribute the greater mental alertness of Americans, especially American middle-class youths, to the lead that American schools have taken in this respect" (*Times* on "American Engineering Progress," December 29, 1900).

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stand, walk, talk, ask—only in a higher and yet more entrancing form.[1]

The truth is, the infant unconsciously translates all its labour, its pains and its troubles, into 'more abundant' Life. So we have everywhere to teach the child to translate, giving him the additional incentive of knowing that he is using a royal power, one which exalts him in all eyes, his own included.

[1] One of the many illuminating distinctions which we neglect or ignore is that between copious and mathematically accurate, and *intimate* knowledge. The latter is sometimes gained almost at a glance, and translates itself as food does into the living tissues of the learner; the former merely gives us walking text-books, manuals, encyclopædias, or else simply kills out the living energies of mind. This is well put in an article in the *North American Review* (June 16, 1902): "College courses and laboratory practice teach the youth what has been done; they prepare him to begin original work for the increase of knowledge. When it comes to this point in their courses of education, however, many excellent students display a certain sluggishness, or, as Tyndall would say, 'a lack of the scientific imagination.' Our problem is to stimulate and cultivate the intense mental energy needed by the investigator" (p. 839).

"Of course, minor considerations inevitably come into play in the ultimate decision as to the filling of a given vacancy; yet, if the first and major consideration is simply, 'What has this man done that demonstrates his intellectual energy, his productiveness, his enthusiasm, his intimate knowledge of the subject, his fitness to lead those who must be taught?' then we shall certainly rule out all undesirable candidates" (p. 840, *Science in America*, by Professor C. Abbe).

The *Spectator* (June 21, 1902) may here be quoted in contrast: "The Prince of Wales showed very plainly at the annual dinner of the Civil Service that a speaker may have no intimate knowledge of his subject, and yet by instinct or good fortune go straight to the very heart of it." Now 'intimate' knowledge is exactly that which does go to the heart of a subject; the writer meant 'technical' or 'official' knowledge merely.

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CHAPTER XXIX

WHAT Professor Sully calls the germ of the imagination normally appears during the first year of life. "The moment when the baby's mind first passes on from the sight of his bottle to a foregrasping or imagination of the blisses of prehension and deglutition . . . marks an epoch in his existence. He not only perceives what is actually present to his senses, he pictures or represents what is absent."[1] Now this true imagination is quite distinct from fancy, which if graceful and even fascinating, always involves more or less desertion or defiance of fact, whereas the imaging power, however much it may idealise, is still faithful to its basis of fact. And this imagination in its first 'germs' gives us the sense of movement, event, or object—what that 'sense' signifies.

When we understand that Sense is the essential thing as means of (1) all experience, (2) all interpretation, (3) all knowledge, (4) all conduct, (5) all prediction; and that Sentence, Word, Letter (also position, form, or content), are merely means of conveying that sense, we shall begin to train children in a new spirit.

To go at any length into detailed applications of the signific method of training would of course in this book be out of place, and indeed would demand a separate volume.

[1] *Studies of Childhood*, p. 405 (1895).

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They should all be the reasoned outcome of a serious study of the subject by representatives of the most advanced educational thought in the world. But at least we may be sure that the pupil's powers of interpretation will be trained in a fresh and living sense. This interpretative power (leading to valid inference) is still so feeble that we resent the least obscurity, even where such obscurity is the inevitable condition of expressing facts of the highest importance from a new point of view. Where this is really the case (and is not the device of the sham thinker for evading the inconvenient critic under a shower of fine words) we might as reasonably complain of the shadow which gives to physical light its value. The child will thus learn to unravel and to reconstruct sentences and paragraphs, and to detect changes of sense which alter value or 'venue.' He will be shown the loss of clearness, the confusion, the poverty of idea caused by the common neglect of valuable distinctions such as that between the imaginative and the fanciful.

Let us look into this particular example a little. In this case the scientific imagination has been amply and eloquently vindicated by Tyndall and others. Yet how few seem to grasp the fact that by Imagination alone do we realise and avert the dangers of Fancy![1] By the road of true imagination we approach, even if we do not reach, reality. By the road of fancy—the fanciful—we swerve away from it. No harm if we know this. But how few of us do! And how many make the fatal mistake of confounding Imagination and its greatest enemy—Fancy: using indifferently the words which embody this precious

[1] The present anarchy of use results (as Dr. Schofield and others have pointed out) in our dangerously confounding imaginary diseases with diseases of the imagination. But even here we ought to speak of fanciful or fantastic diseases. For a disease which cannot be imagined cannot be diagnosed.

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distinction. A good example (among multitudes) of this unfortunate habit is found in the use of fancy, imagination, and even conception as convertible terms, which is found even in such admirable writing as that of the *Spectator* articles. One of these makes imagination equivalent to fancy, and then says, "Conceive" (meaning imagine) "Nietzsche in such a world."[1] No wonder that as we read on we find that while "we can all think of eternity forwards—it is only like thinking of a motor which in exerting itself for ever renews its own power—but the most earnest believer among us fails to conceive of the Being without beginning. De Quincey, in that marvellous dissertation on Lord Rosse's telescope—he who has not read it fails to recognise the full majesty of expression that lurks unused in the English language—wisely made of this idea of being without beginning the climax-mystery of the universe; but even to him it can only have been an idea expressible in words, but incapable of realisation in thought." But that is just because the 'full majesty of expression' 'lurks unused.' We need find no inherent difficulty in either, until we want to make others share our conception; and then of course, though we could ourselves express it, they could not understand an unrecognised usage. As already said, it must always be remembered that for this reason it is as yet practically impossible to say on this subject many things which urgently need expression. We must wait for an audience trained and ready as of old to welcome innovations or reversions in language which make for enriched significance, and to grudge no trouble in learning the most valuable language of all, that of the growing points of thought. The pupil will then be given lessons in 'seeing through' the most ingeniously and convincingly plausible

[1] "The Limitations of Fancy," *Spectator*, Nov. 24, 1900.

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statements: in detecting, not merely formal fallacy, but also intentional or unconscious inconsistency, which (as we are) easily escapes notice.

The intentional production of illusion has never yet been systematically used in education or employed by a philosophical writer to put his readers on their guard against errors which are not merely logical. It is a pity that the highest developments of the power to produce at will, and therefore to detect and expose fallacious inferences, have hitherto been called mere 'conjuring,' and devoted only to money-making by amusing trickery, if not to less defensible objects.

If the power wielded by the conjurer, which is largely the result of special training, were only translated into an altogether higher form, we might look forward to striking results in education. We should obtain most valuable studies in ambiguity of thought as well as of word, both voluntary and unrecognised; and students would learn the extent to which the plausible dominates us. They would also realise how easily even the ablest writers occasionally miss significant points by fixing attention on issues really less centrally important than others which, through the present lack of early signific training, may even seem trivial.

Professor J. Jastrow's study of the Psychology of Detection[1] well illustrates this suggestion, and his appeal to physiology is illuminative. Not merely in 'recognising a book, a picture, a face' or in judgments on the occurrences of a 'séance,' but also in the deepest thought and study, men may in a true sense fully see and understand what they call the 'world,' but yet, in fact, suffer from 'psychic blindness' and find it unmeaning—whence pessimism results. For Man in such case blames the world; to him it is an in-

[1] *Fact and Fable in Psychology*, pp. 106-7 (1901).

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explicable, and therefore distressing 'riddle'; but what he needs is the stimulus of this very distress (carried, indeed, to the point of the intolerable) in order to develop in him an enhanced power of 'interpreting, assimilating, reading the meaning' of that which, as things are, seems to him cruelly senseless, or drives him to arbitrary and precarious solutions.

We have never yet deliberately trained this faculty; is it not time to begin? The conjurer can, if he will, make you see the true meaning of his apparently insoluble puzzles; the same power applied to the great problems of life would make us see significance where now we most despair of it.

The child must therefore learn to gauge context by context, and to hunt with unerring scent for some else unnoticed peculiarity of apparently chance expression or form of expression which gives a clue to the writer's (or speaker's) real sense, and therefore to the true order of sentences. In this work he must even in the interests of detection ignore grammar. He must learn to become a sense-detective, detecting his own as well as others' more subtle blunders, more hidden flaws in that significance which it is the object of articulate expression to convey. The accomplished Significian is at least a Sherlock Holmes, and more, a Helmholtz.

When the pupil has been thus trained he can be trusted to economise Sense and to clear himself. For throughout his studies he must be constantly reminded that were it once understood that it was possible to learn to be more expressive, much of his labour would be needless.

But his teachers and examiners must first set him the example. When an average child informs his examiner in history that Wat Tyler led the pheasants' revolt and pillaged the Crystal Palace: that the Black Prince extinguished himself at Crecy, and that Common Pleas should

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not be carried about on the king's person: when he answers to such a question as "What is a watershed?"—"A shed for keeping water in"; or to the question "Where were the kings of England crowned?"—"On their heads," this simply betrays the failure of his teacher's methods, or the absurdity of this kind of question at a given stage. The answers make, of course, delightful nonsense; but while enjoying the joke, we ought to realise with shame the terrible witness to educational stupidity (and that not the child's) represented by these specimens.[1]

A curious witness to the strength of our natural interest in questions of expression and therefore of sense, meaning,

[1] "Any one who chooses to observe the development of a child's mind will, if he does not suppress its natural bent, convince himself that a child from three to five years of age possesses thinking powers of greater capacity than we are in the habit of crediting to it. One of the external evidences of a thoughtful mind is the asking of questions which bear definite and logical relations to each other; and this is precisely what an average child of that age, when talking to a person in sympathy with it, is persistently doing. It is not content with a flimsy and evasive answer, and how strong is its intellectual craving is manifested by its evident disappointment or display of temper when its ignorant parents impatiently curb its curiosity. It is very seldom that one finds a mother who has endeavoured to retain her child's thinking capacities. I was once present when the four-year-old little daughter of such a mother was making inquiries about the planet Venus, and after she had been informed that both Venus and the earth travelled round the sun, and were illuminated by it, she put the query, 'Then if there were people on Venus our earth would look to them like Venus looks to us?' This question demonstrates that a child possesses thinking powers sufficiently vigorous to enable it to see the logical relationships of bodies to each other that would certainly do credit to many of its superiors in point of years. This is not an isolated instance, and my impression, derived from observation and from conversation with observant persons, is that the average child, if not suppressed, is capable of a quality of thinking that leads its elders, when they try to follow it, into an intellectual quagmire of inconsistency and absurdity from which they beat an inglorious retreat by angrily bidding it 'not to ask silly questions.' If they bid themselves not to give silly answers their request would be just.' (G. P. Mudge on "Darwinism and Statecraft," *Nature*, April 11, 1901.)

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and significance, may be found in the general delight, sometimes even too absorbing, and common to all classes, in guessing riddles, solving puzzles, putting letters together to form sentences, re-setting anagrams, and so on. So with games like 'cross questions and crooked answers,' 'Russian scandal,' 'buried cities,' verse-making and story-telling (each one contributing line or incident without knowing what the other ones are), besides charades and dumb crambo. And this takes the form even of more serious mathematical problems, cheerfully undertaken by the ordinary family party as an evening's amusement!

It must, of course, be remembered that much of the work here suggested describes at least in part or in spirit what is already the aim of every progressive teacher. The point is that such work is only incidental; that it has never been gathered up under a definite general term; that it is recognised in no public school or university curriculum, and depends wholly on the chance of individual tendencies, where these are free to act. Whereas, in the mode of teaching which the term Significs properly connotes, the child must everywhere and always be so imbued with the sense that the one thing first needful is Sense, and with the idea that, having this, all things may be added unto him, that he will instinctively and habitually start from it and look for it in every step of his way; knowing that it is this which he has to grasp—to mark, learn, and digest—in every part of every subject; so that in after life he 'cannot help'—cannot avoid—becoming a private, at least, in the great army of generators of a transfigured Expression and a new transvaluation.[1] He will, at last, unconsciously accept or reject,

[1] There is no doubt that the method of Socrates might be and ought to be freely used in education. As the *Spectator* (March 25, 1899) has well said, "The greatest method of destroying error, of unveiling truth, of

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as he already does in letter-forming and spelling, in reading and in cyphering.[1]

One advantage of the signific method is that the danger of specialism is avoided, while its advantages are developed. The bent (sometimes more than one) of each child and young man having been discovered, he would be permitted as a privilege to pursue his favourite aim. And when the examiner's turn came, the master and tutor would say: Examine Smith major in that; all the rest of his course is elementary. Only it would be understood that, of course, all the boys alike had their penetrative and interpenetrative powers cultivated to the utmost; so that they would, according to their several abilities, have seized the gist, the purport, the application, the true value even of those subjects which they had not specially chosen as their own. Thus there would be fewer specialists in the bad sense—men whose minds are warped, who can harp only on one string, and who, therefore, cannot play in the best way even on that.

But there would be more specialists in the good sense: men who are real masters of one subject—of two or three, if they are great enough—and the intelligent discerners of significance in all others. Thus they can *place* their own subject, and compare it with others; they can enrich it by realising alike its relations and its uniqueness. When a man

awakening the mind, was the method of Socrates. Perhaps of all our needs to-day there is none so great (as we think Dean Stanley observed) as a thorough dialectic after the manner of Socrates, in which all the vexed questions of our time should be subjected to that most wonderful intellectual analysis. How our mental shuffling, our begging of the question, our stupid confusion, would be burnt up in that consuming flame!" And no one would appreciate and benefit by it more than the child and the youth, for many of their own questions which we often merely laugh at or snub are in fact Socratic, although they themselves may be but partly conscious of the irony of these.

[1] See Note XXV., Appendix.

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boasted that he read nothing but the Bible, "then you haven't read that," was the deserved retort. We may paraphrase one famous dictum, and preface every lesson with the pregnant maxim that there is nothing gained in life which has not been first found in sense; and continue with another dictum, that where all experience begins in sense (in one sense) it assuredly all ends in sense (in the other sense): that whereas in one sense we may leave 'sense' behind, as we acquire meaning and advance into the domain of pure intellect and abstract reasoning, we only need it more and more in the other sense which issues in Significance.

It ought to be needless to remind ourselves here that these suggestions have presupposed some recognition of the working of phonetic laws and of the history of language generally; and does not exclude, but adds interest to the ordinary lines of grammatical study, especially in its comparative form.[1] But a teacher worthy the name will have taken this for granted. Unfortunately, the study hitherto often called philological, sometimes even literary, is in the most technical sense linguistic only. Thus it has so far proved attractive merely to a small class of too often pedantic specialists.

Now, however, that some of the most distinguished experts in language—notably M. Michel Bréal and Dr. Postgate—have begun to protest in plain terms against the prevailing neglect by linguistic scholars of Semantics, the 'science of the changes of meaning,' the outlook is more hopeful.

[1] It will be remembered that this was urged in Chapter II.

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CHAPTER XXX

WHEN the study of Significance becomes a recognised and vital element of education, as the very nexus of all experience and expression, it may naturally become the subject of a series of Lectures. And these would include a course on the principles and practical working of imagery—popular, poetical, philosophical, and scientific. (This, of course, might be varied to suit audiences of the young or the uneducated, or of any degree of culture.) The lecturer on Popular Imagery would have a number of simple objects and some elementary apparatus by which he would illustrate the original, generally the material, conditions of figurative usage. For instance: he would show a given object reduced or magnified or distorted in various ways by the action of lenses through which it was seen. He would show it also through media of varying degrees of transparency and manifold tints. He would 'throw light' upon it and then obscure it. He would show that while, say, its form and its colour and size were distinct, they could not be separated except in certain cases and senses, and he would show what these were, and how we should gain in clearness by using the idea of distinctness and the idea of separateness to mean different classes of fact.

Again, standing on a given spot, he would grasp various objects, and then make efforts to reach what was nearly or

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quite 'beyond his grasp.' Then he would show that he could still smell the rose beyond his reach, and remind us that he could hear what was much too far away to touch or smell; and beyond that could see what 'transcended' the utmost powers of hand, foot, nose, or ear to reach. Lastly, he would remind us of the further world (strictly 'transcending' that of the unaided senses) which microscope, telescope, spectroscope, revealed, or in which the X-rays acted. And once more, he would suggest that as we already used these very expressions, and were tempted to refuse to have anything to do with what we could not 'grasp,' that we had better learn when young to use such terms in a truer and more orderly, therefore simpler and clearer, fashion.

Then he would have a box, a doll, a nut, etc., to illustrate the metaphorical use of inner and outer, and a model of a house with its foundations, also a model of a globe set fast on a fixed stand (showing that the stand again required a table, the table a floor, the floor a 'ground,' and so on, but 'under' all—what? he would ask).

Then, by means of a rotating globe (one of the ordinary ones used in elementary science lectures), he would show the difference made in our ideas of the over and under, the above and below, the higher and lower, by the discovery of the antipodes. So he would explain that it is no longer true in the ancient or absolute sense that the 'heaven' is higher than the 'earth,' or above us; while it remains true in a practical sense. Then he would have scales of 'higher' and 'lower' temperature, and would show that what we call the 'higher' gifts of intelligence were actually associated with the 'highest' point in our physical frame.

Then the Lecturer would have a veil, to be drawn or undrawn between Looker or Observer and Object,—this

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again (like the box) making an inner and outer, and 'sides' and 'aspects.' He would show how, in fact, whether you will or no, you imagine yourself an Outsider trying to look into the recesses of a nucleus, the innermost point of which you imagine as something smaller than yourself, immensely[1] within your own scale of magnitude; or else you imagine yourself an Insider, trying to look out to the expanding reaches of the sky as to something immensely beyond your own scale of magnitude, and in that sense Outside. Thus his audience would find out that you cannot say Insider, or out-to; you look 'into' even the farthest, the 'outermost' stretches of space.

Then he would translate the mathematical abstraction of a 'line' into a wire, or a rope, or a plank to picture a 'path,' etc., and to represent that which we all unconsciously represent when we say we are taking this or that line. Also he would translate it into a scratch or mark, and then ask, What can we do with that only,—never going beyond it on the 'one hand or the other'? Then he would show the practical equivalent of a plane surface, and thirdly of a cube; and he would give representative passages of commonplace writing from letters, newspapers, simple books, showing that we do in fact use these three main ways of putting things: in other words, that much of our mental picturing has a relation to the 'three dimensions' of which perhaps we have not even heard. Then he would show a 'dead-end,'—a *cul-de-sac* beyond which to go would be—nonsense. But, reminding us of the 'veil' or 'curtain,' he would show how a subject may be 'closed' and 'reopened'; and then he would pictorially show a 'way'—whether roadway or waterway—proving that an object using any means of ad-

[1] Here he would note that we have only the terms of comparative greatness wherewith to express comparative smallness.

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vance or progress must needs leave more and more of such 'means' behind it.

Then he would take a straight line and show that the farther it went (was produced) the farther it was from its starting-point. He would show that this idea did not apply to a curve, and was reversed in a circle. Thus he would show that, while a straight line may always form part of a great curve—one too great to be detected,—a curve can never form part of a straight line.

Then he would revert to the globe, and show, by that analogy, that when we start from a point upon it we come back to where we started,—but from the opposite direction. Pointing to the rotating and moving sphere representing our earth in movement, he would show that meanwhile we have really moved on, first round our sun, then with that sun in a further unknown direction. He would thus show the difference between thinking on one line, thinking on many lines on a flat surface, and thinking in cube; also how thinking in the round and in motion like our earth, differs from thinking on the flat and the fixed, like a fabulous and fictitious and impossible world. He would show us what we lost both by using current imagery in false senses, and by not learning to use the priceless figurates which science is putting into our hands.

Then he would show us a lump of stuff which could not move of itself, and if moved would stop of itself without resistance or friction, and in that image represent to us the 'mind' or the 'soul.' Again, he would show us a complex of movements—a passage of melody, the evolution of birds on the wing, the movements of water, our own co-ordinated muscular actions and various combinations of wave-motion observed or inferred in air and 'ether,' and he would show us how different the ideas called up by the two classes of

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imagery must needs be, and therefore how different our practical inferences. In every case (and he would have a legion to choose from) he would warn us to make sure that the original of the image, the thing or occurrence which we use figuratively, does really bear the use to which we put it, does really yield the notion we want, does not actually contradict or confuse this, does not, that is, convey something quite different; and thus make us, unconsciously, the cause of the confusion we condemn in others.

Then he would wind up with a collection of 'bulls of metaphor,' which would certainly make his audience, already excited and amused by a 'new way of looking at things,' explode with laughter. They would in the end disperse with the seeds of a new figurative conscience implanted in them, and the first blow struck at a demon of Confusion.[1]

[1] We might also have Lectures on :—

(1) Expression : its scope and value.
(2) Value : (*a*) as sense, (*b*) as meaning, (*c*) as significance.
(3) Sense : Reactive (sensation), Interpretative (of sign), moral and æsthetic.
(4) Meaning as (*a*) intentional, (*b*) significant.
(5) Significance as the finally inclusive value-term and the best definition of the Divine.
(6) On the instinctive vocabularies of language. 'Eastern,' 'western,' and their possible implications : (*a*) Time ; (*b*) Pain, Pleasure, etc.

But this of course is only one out of many possible developments.

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CHAPTER XXXI

But it would be a serious mistake, at a stage of mere suggestion, to make more definite proposals or plans on the above lines. That would need, indeed, both an experience and an aptitude much greater than any to which the writer can lay claim.

When the leading idea of Significs is accepted; when we have begun in good earnest to subordinate every other subject to the study of that sense, of that meaning, and above all of that significance which makes the whole value of fact or idea, and of the order and sequences of either; when we have thus reached the vital point of every kind of inquiry and mastered the reasons for every kind of activity, then the mind of the race may be trusted to work out its own method in many practical directions and forms.[1]

Meanwhile we may once more urge upon the reader a significant contrast. On the one hand, we have the energetic and never faltering labours of the infant and of the young child, first to master complex muscular feats, and especially those of the hand (even at the cost of discomfort, fatigue, and pain); then to master language and to apply a primitive logic (failing only through lack of experience) in its use; then to question, to inquire, to explore—to ask not merely the What and the How, but

[1] See Note XXVI., Appendix.

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most of all the Why, of things and happenings around him, a pushing out of intellectual tentacles which indeed often reach far into the remote and the unknown. (As we have already seen, a valid use of this metaphor will involve the passing beyond the tentacle stage itself, and the entrance into that of vision; of the clear perception and the true interpretation of the things which lie beyond the reach of the most adventurous 'tentacle.')

On the other hand, we have the listless want of interest in, sometimes even the sullen dislike of and resistance to, what is understood by 'school,' by 'lesson,' by 'study,' and the eagerness to be on any pretext released from them, so bitterly complained of by the teachers of later youth.

This can have but one reason. We have lost the guiding clue of Nature; we have failed to take up her really educative task on her own system; we have neglected to begin by cultivating the penetrative sense of the why and to place the idea of sense, of meaning, of significance, at the centre of all our training.[1]

[1] "No one is so original as a child, and whatever they mean by the names in the Education Office, all of our education, especially in Primary schools, is secondary; it takes no heed of the untutored instinct, the sort of *camaraderie* that at first lives between children and nature. And what a mass of originality this 'secondary' education has crushed out! How many people, the old rheumatic Puritan schoolmaster among them, are altogether incapable of receiving the

impulse from a vernal wood,

because they have spent all their own plastic spring in getting by heart other men's notions. Our children are becoming second cousins, many times removed, from nature; and this is what Huxley lamented when he spoke of the 'saddening and revolting sight of men sunk in ignorance of everything but what other men have written,' and yet possessed of a 'sense of beauty so keen and power of expression so cultivated that their sensual caterwauling may almost be mistaken for the music of the spheres.' At the other extreme a sympathetic study of nature, such as we saw evidence of in the pretty results of the field expeditions of the Board

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Why is the child the arbiter of the future, the discoverer of world-secrets? Because the parent inherits a primal tendency to revert to the fixed and rooted form, while the child is 'free-swimming'; it is the natural explorer. And for ages we the parents, through the teachers, have been more and more successfully trying to train and educate our 'free swimmers' into fixed and rooted prisoners; thus atrophising or mutilating their discovering and interpretative powers, just as our own were injured at the same age.

Again, throughout the plant-world, we find in the 'child' —in the baby growth-point, the leading shoot, the seedling— what Mr. F. Darwin[1] calls "a wonderful kind of sensitiveness—a sensitiveness to the force of gravity." He continues:—"To those accustomed to think of Mimosa as the sensitive plant *par excellence* my words may sound strange.

school children in the north, would save many so-called educated people from that affected mania for nature which so irritates the true nature-lover, the man who has enjoyed 'sessions of sweet silent thought' in the midst of nature, who has been able to reap 'the harvest of a quiet eye.' . . . The point is, if once you can teach a child to observe, to be a seer, he will 'keep his weather eye open' for the rest of his life. That phrase, 'the weather eye,' must have come from a nature-lover in the first place, and afterwards been perverted into evil use by a victim of technical education. . . . The dissatisfaction of the issue of the Board schools comes from the starving of the primary instincts, and the young men and women need the town because the love of country with which they were born is rooted out of them. . . . It must surely be of good omen for the future that the Board school children of the big factory towns in the north now escape into the country—play legal truant as it were, along with their teachers" (*The Pilot*, August 2, 1902).

There is one passage in the above excellent appeal which may be misunderstood. There is no need to teach an average sound-minded child to observe or to be a seer. He is (in greater or lesser degree) that already. It is only necessary to train and discipline this great natural gift, and to teach him to analyse and criticise the results gained so as to allow for the 'personal equation' also. For this brings us back to the central question: In what sense is what I have just observed real, or a fact?

[1] "The Movements of Plants," *Nature*, Nov. 14, 1901.

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But the sensitiveness of Mimosa is crude by comparison with that of the seedling. A plant with a perception of the position of the centre of the earth and a power of growing along the line so perceived, is a much greater miracle than a leaf that closes its leaflets when burnt or cut or shaken." And this "is not explicable mechanically. Gravitation is nothing more than a sign-post or signal to the plant—a signal which the plant interprets in the way best suited to its success in the struggle for life, just as what we see or hear gives us signals of the changes in the exterior world by which we regulate our conduct." Further on we find "not only that the tip of the root is the sense-organ for gravity, but also that the motile part is not directly sensitive; in other words, that gravitation is perceived exclusively in the tip of the root." And in experiments designed to thwart this 'perception' the horizontally placed tip "continues to send commands to the stem to go on curving, in a way I can best explain if I am allowed to make the plant express its sensations in words. The tip says to the stem, 'I am horizontal, therefore you must bend upwards'; and when this order has been obeyed the tip says, 'It is of no use, I am still horizontal—go on bending.' The result is that the stem curls up into a spiral like a corkscrew or a French horn." Imagine the typical adult in this relation to the typical child! Yet there may be some points of view from which it would be the natural and most fruitful procedure thus to set childhood in the midst and interpret its message. Many years ago in one case this took the form of reminding children that it was for them to set an example to their elders.

For there is more yet. "When a group of Setarias is illuminated from one side, they bend strongly over, with their little spear-heads all pointing straight at the light.

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The spear-heads do not bend; the whole movement is carried out by the stalk on which the head is supported. But the remarkable thing is that it is the spear-head and not the stalk which perceives the light. This is easily proved by covering the heads of a few Setarias with opaque caps. For the result is that the blindfolded seedlings remain vertical while their companions are pointing to the light."

Now the spear-heads answer to the children: it is *they* who, living along their true lines, could bring light to us, the 'stems,' by which we could rightly act. But we carefully cover them with 'opaque caps'; forcing on them adult methods unnatural to them.

It may seem to the ordinary reader extravagant to appeal to the phenomena of plant-life in illustration of the true relation of the human child to the human adult. If such expressions as these now quoted had not been used by a strictly scientific thinker, it might seem fanciful to compare the two and to suggest that the riches of penetrative insight which in 'children's sayings' are only recorded as amusing or pathetic curiosities, are steadily blunted by an artificial system of training entirely unsuited to them. But Mr. Darwin insists that the process which he has called action by signal "is of the same type as action by association, and therefore allied to habit and memory." And nowhere can we now postulate a complete break in the evolutionary ascent.

Of course we have not wholly succeeded, either in rooting our 'free swimmers' or in blindfolding our 'seedlings.' The school-boy still occasionally plays truant after having been the nursery rebel; the average undergraduate still presents to study the mental hide of a rhinoceros; nature, that is, gives us the broadest hints that we, in going

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against her, are defeating ourselves and wasting our own highest gifts.

But still we do our little best to stupefy our children; and then we shake a mournful head before the puzzles, the paradoxes, the 'insoluble problems' of life—*we*, note well; *we* who have ourselves had our 'free-swimming' organs docked and paralysed and been ourselves imprisoned in a cruel network whence we once vainly struggled to escape; we who have been in our precious springtime set to a treadmill round of 'acquiring' raw knowledge and packing it away in an overloaded 'memory.' Thus, mentally, we never transcend that 'fixed' order; we never become true animals, much less men at all; we never reach the stage in which we are free to swim, to run, to leap, even to fly. Failing to recognise the inversion of true order which this implies, we never become fully able to explore, to discover, to interpret—evolving meanwhile sense after sense—until, as the true end of our little lives we reach the seer's throne. And if here and there the evolving tendency is strong enough to defy the cramping and mechanising training, the fixing and rooting and blinding process which we too often call 'education'; to shake it off and soar into the world of greatness; stretching down hands to draw us also upwards,—then once more we shake a melancholy head and fear that this is but the 'genius' which is akin to—insanity! Of course it is. We have not known how, in its tender 'seedling' years, to direct and organise a living force which, compelled to develop either in undisciplined ignorance or in spite of obstructive systems, tends to lose the inestimable sense of balance and proportion.[1]

And this is not all. It is proverbially difficult to fix a true standard of the normal in mind. The alienist has a

[1] See Note XXVII., Appendix.

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'borderland' in which he practically feels this difficulty. But if, for the reasons now suggested, we have misunderstood and misinterpreted 'genius,' it follows that those of us who are least suspected, or least suspect themselves of insanity, are all the time victims of, or at any rate liable to, distorted or 'morbid' views of sanity. However, to follow up this line of thought would lead us too far at present.

Meanwhile it may freely be granted that there have been many individual cases of the truer training. There are 'born teachers' whose gift survives whatever their own school experiences may have been.[1] But these are merely sporadic; they are always considered merely as a question of special personal influence; there is no systematic recognition of the supreme value of such training. And thus we have never, in the way now proposed, suggested to the child that not only in a religious sense is its true home in heaven: that 'heaven' has throughout the ages been used for the ideal home of the race, because Man has always instinctively felt that his destinies, like his origin, were what is here called 'solar' and 'cosmic.' We have never suggested to him that he belonged, not like other animals merely to this world as the centre of his natural universe, but also to the star-world which he animised, to the sky which roofed him in; that in however grotesque or inept a form his race has always reached out to the beyond and the unknown.

When we do this, it will be easy to show the child that we have to rise to ever worthier language for expressing this solar and cosmic relation, and that meanwhile we have to recognise distinctly what we lose by having to express our highest ideals in language inherited from ancient animisms and astrologies. For the child will understand better

[1] See Note XXVIII., Appendix.

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than his sophisticated elders that his heritage is at least as much greater than this world as the sun is greater than the earth; that man's very discontent with the ordering of this life, and with the place which suffering plays in it, shows this; and that we are here to ask more and wiser Whys than we have ever asked yet, and on truer lines, thus and thus only to earn undreamt-of answers. If we allow the appeal to a 'solar' centre of life, it is hardly possible to lay too much stress on the inference that our only present means of defining what we call the 'heavenly,' the 'spiritual,' the 'divine,' are 'planetary.' Our greatest minds (and our own at their best moments) are significantly discontented with these. We have nothing better, and yet we see that they tend to dwarf, stunt, blur, even distort our vision of the home-world of ideals. The very word supernatural, shown to be self-contradictory by our use of the phrase 'the Divine nature,' has its value in witnessing to this. So have phrases like 'the unknowable,' of which the paradox is itself suggestive.

In one sense the agnostic is quite right: the planetary mind, absurdly taking itself and its world for solar, actually knows nothing beyond this life with its floating glimpse of experience. But the mind which is actually conscious of being, like its world, planetary and strictly satellitic, is equally, though indirectly, aware of a world not merely greater but so much worthier than the mere planet treated falsely as centre, that its whole figurative vocabulary is recognised as a mere provisional expedient; to be treated as the ox and lion gods of the oxen and lions.

Such a mind recognises the sacred duty of at least making its expressions of man's highest ideals as worthy as they can be, and of ever reaching onward and upward. It sees, for instance, that 'high' is really a good figure for its

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aim, and 'base' a good figure for its failure and shame. But if our ultimate is a mere 'foundation'; if we can only build, and never in any sense rise and ascend into a heavenly status, why should we resent the imputation of baseness?

Throughout language—though, of course, in very varying forms—we shall see not only the 'solar' but the cosmic impulses making themselves felt. The children of the future will be trained to test and to organise them in the service of practical and moral life.[1] We can see but little of the solar world and feel but little of the cosmic life directly, with the naked eye and the bare skin of mind. But we can indirectly see and feel them as the man of science, through the instruments which his brain has devised, can see and feel a world which he only reaches indirectly through their means. He 'sees' thus the constituents of a nebula or the events of an eclipse; he 'feels' thus the tremor of a distant earthquake or eruption; he is thus sensitive to radiations which excite no direct sense-response.

So we see and feel the world of suns, the world where GOD is light, and where light is not merely 'cold,' but, as through our own sun, the very source to us of the life-giving warmth which we call 'love.'

Small wonder that men have worshipped the sun! They have, at least, thus recognised the revelation which science now brings out of that world which mind calls material, and rightly sees as real.

[1] The true value of philosophy might perhaps be usefully illustrated to a child by means of the pendulum of a clock. First it sees the swing and hears the ticking; then it sees a quite different result follow: the clock hands go round. But the ultimate outcome is yet more 'transcendent' or 'far-fetched': the clock measures and tells 'time,'—so we know when dinner is ready! Yet there has been no desertion of the simple and direct perception of the ticking. And we are more and not less 'practical' in this widening of inference.

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CHAPTER XXXII

WHAT then have we gained so far by our inquiry? Have we reached a point from which, even on a distant horizon of thought, we can discern a possible answer to the question why man asks Why, and also a reason why he needs to be warned of the danger and penalty of asking it where it does not apply, and therefore cannot be rightly answered?

Before we can attempt to answer this question it will be well to review the course which we have followed. We began by pleading for an extension of the bounds and resources of expression corresponding to a wider range of experience, both in fact and conception.

In the application of a threefold idea of import to consciousness and experience, our appeal was to science, which supplies us, both in astronomy and biology, with the presumption that this order best 'describes and resumes' natural fact. We saw that this implied fresh views of the work of analogy, and pointed to a new departure in philosophy as well as in psychology; that it made for a true instead of a morbid plasticity in language, and a revelative instead of a merely plausible lucidity. We considered a few out of many possible ways of bringing to bear, in practical method, the recognition of the supreme importance of clear and ordered ideas about the nature of sense, meaning, and significance, and the extent of our

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power to convey and to appreciate them. We disclaimed all idea of discarding the acquired habits or traditional customs of language, seeking rather to enrich and to transfigure them, as well as to rectify all which now makes for hindering instead of fostering our means of expression; and we suggested that metaphors like 'binocular mental vision' and 'thinking in cube' might be used to indicate developments in conceptual power for which, on this line of thought, we might reasonably hope.

But, first, we tried to show that our current ideas, both psychological and philosophical, were vitiated at the outset by the bias of an untenable because pre-Copernican view of the world and of man. This brought us (as indeed in every case we have been brought) to the question which ought everywhere to be recognised as vital. In what sense is any proposition, any statement, any theory, any postulate, true or valid; and, in what sense is it here used?

This led us to the suggestion of a method of Translation in a sense wider than any in which the word has yet been applied. An examination of the implications of this idea brought us to the definition of man as in one sense the Expression of the world. And this again suggested an inquiry as to the soundness of the accepted modern view of the primitive mind, of the myths, grotesque or fantastic, which grow with man's early growth. Thus we reached the moment of the first human query.

Supposing these broad lines to be accepted, here arose the question, how then to effect the needed new start? We proceeded to show that, in any full sense, a new start could only be accomplished by a generation which for the first time had been universally trained to recognise the central importance of sense, meaning, and significance: to distinguish and rightly to interpret all three.

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Such a training of the future is here called Significs, because this raises the very idea of Significance to its true and supreme level; because, taking sign and what it signifies at their lowest and humblest, it leads us through a fresh study of sense to a fresh study of meaning which shows us significance as the key of keys to reality.[1]

No more can here be added. Some attempt may later be made to show how the method of inquiry and observation which in the form of physical science has led to the triumphs evident to all, but which has apparently never yet been deliberately and consciously cultivated in childhood, can be applied to some of our unsolved problems. Among such problems will be those of space and time as affecting our conceptions of immortality and divinity, those of personality as affecting our ethical ideals, and especially those connected with a dynamic view of the universe (and therefore of all in every sense within it); a view which science now sanctions and enforces, and which, more widely applied, both accounts for and solves some of our most 'hopeless' puzzles. This will be but the natural result of concentrating all the mental and moral energies of man, while yet his mind is wholly plastic, upon that form of question which breaks through the surface of things. Such questioning

[1] "To know how to create, to know how to think, to know how to live,—these are knowledges which can only come to those who are well born, or have at great price bought the right of human citizenship" (*The Nineteenth Century*, Havelock Ellis, 1900, p. 50).

Man as craftsman and as artist can 'create' on the sense-level; that is, without deliberate or reasoned intention; he may even be surprised at the result of his own labour. He can only in the full sense think on the meaning-level. He reflects on what he has made or is going to make. When he has reached significance he enters that which can only be called Life in a transfigured sense. Again, man can 'create' on the planet; beyond that limit he can make nothing. But he can (and in the highest sense he must) think in the 'solar' world. Once more, in the transfigured sense which to us makes life essentially worth living, he lives in the cosmos.

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wins, or rather earns for the first time, knowledge which not only stands, but invites the most searching tests available. This true knowledge sees even the poetry of the future as born out of that very science and that very criticism which are now supposed to kill it. At least, let the experiment be fairly tried; at least, let us begin by giving sense, meaning, and significance that central place in our attention and our interests that, whether we will or no, they already have in the world of human experience.

This will not, of course, involve an abstruse or abstract study, still less the search for an impossible 'absolute.' There is really a common sense of the Why of things, inevitably developed up to a certain point by the necessities of evolution. Man has survived the loss of fangs and claws, and so on, by enhanced brain power, by the immensely developed forms of kenning, conning, cunning. By these he circumvents the danger which he could not avert, and prevails over the resistance which he could not overcome by direct muscular force.

The activity which we call mind expresses itself in infancy, soon after language is acquired, in the form of the question Why. It gives the secret of knowledge and of mental and moral domination. This genetic spirit of inquiry, as we have already seen, is the very spring of science. If it has seemed on the philosophical side to go astray into regions where answers are mutually discordant, thus incurring the scorn or neglect of all but a small section of mankind, this has surely been because the lack of the training here pleaded for has tended to deprive the highest thought of a constantly rising standard of expression; and has thus earned for 'metaphysical speculation' a deserved bad name. For the only true metaphysics is the growth-point of the sense which is common to Man as Man: the sense for

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real criterions of truth and true criterions of the real; the sense (which, alas! we degrade into superstition), that we are penetrated through and through with potential knowledge which only remains in the form of 'insoluble' problem and 'baffling' mystery, or of vague irrational mysticism, because we have not learnt how to approach and deal with it through the encouragement and cultivation of the child's Divine gift of the Why. And from this point of view the true philosophy does not yet exist.

For we do not yet fully realise that the youngest child is himself in a true sense a 'metaphysician.' From his earliest speaking days he assimilates and freely uses abstract terms, —like 'other,' etc. Is it not, then, a cruel pity that if his natural interests are what are called practical, he should be allowed to grow up in the idea that 'thinking over and working at whys'—investigating causes or reasons, expressing the meaning and value of reality, or its knowledge, interpreting himself or his world,—is either hopeless or mere dexterous thought-spinning and word-weaving?[1] If, on the other hand, he is a born thinker, the result of such bringing up too often is that he tries to model the world of reality on his own special pattern. He becomes the victim of his own powers and his own knowledge. He does his fellows the grave disservice of providing them with a thought-cage wherein they may safely play. He founds a school of philosophy which at best appeals in a good sense only to a certain type of mind, while in a bad sense it either makes for confusion or for petrifaction. Such a system causes, *e.g.*, the scientific Man to insist upon a rigid confinement of attention to what are for him the only demonstrable and therefore the only real or valuable facts, *i.e.* those capable of being proved by actual experiment; while the 'practical'

[1] See Note XXIX., Appendix.

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man remains serenely content to muddle on through interminable and quite avoidable blunder, the product of his own fallacious theory that he has and need have no theory at all![1] But if we can 'inaugurate' an era of Significs, and substitute that idea for what is now the misleading idea of metaphysics (properly, if anything, concerned with consciousness or what we now mean by psychology); if in every intelligent man alike we can appeal to the sense of meaning, and beyond that to the sense of significance which is also the sense of value, and thus disentangle the vital worth from the endless perplexities of question, of problem, of experience in every form, then what is there that we may not hope for?[2]

Surely it will provide a fresh stimulus; it will transfigure language and interpret history; it will not merely 'harmonise science and religion'; it will rather show that every form of truth is potential in every other, and that thought is merely 'out of tune,' because we persist in applying to present needs a traditional rate of mental vibration which falsifies its very pitch, and produces a discord so intolerable that most of us have to deafen ourselves to the resulting din. But assuming

[1] One is reminded here of the great Sir Robert Peel's well-known dictum that nothing is so misleading as facts, except figures. This paradox is literally true unless we can analyse, discount, interpret them; approach them, that is, in the spirit of Significs.

[2] One thing we must, in such event, be on our guard against. As Huxley said, in his pregnant way (in the essay delivered twenty-one years after the publication of the *Origin of Species*), "History warns us that it is the customary fate of new truths to begin as heresies and to end as superstitions; and, as the matter now stands, it is hardly rash to anticipate that, in another twenty years, the new generation, educated under the influences of the present day, will be in danger of accepting the main doctrines of the *Origin of Species* with as little reflection, and it may be with as little justification, as so many of our contemporaries, twenty years ago, rejected them." However, it would be premature to take such a collapse as in this case more than a remote even if a possible contingency.

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that the line of thought here suggested is on the whole a sound one, we must begin in the broadest sense with Expression, and reach this through language. We must appeal to the 'educated man' to see that his children are really 'given their chance to speak.' We must, at least, look forward to the substitution of the Significian for the Metaphysician, since the former has all the range of the latter to choose from, while he is also free of those very domains of thought which are supposed to be shut off from the metaphysical thinker, or he from them.

Of course, as now, we shall be drawn to or have to choose some special line of thought and action, and it is imperative that this should not be confounded with others. But as we shall be consciously and deliberately concentrating ourselves on that which connects our subject with every other,—on that which constitutes its human value, and contributes its quota to the general treasure-house of human achievement,—the era of mutually sterilising controversy will be succeeded, not by one of general apathy and indifference, or of paralysing pessimism, but by one of mutual stimulus and of a mental symbiosis. We shall attain to what has here been called binocular thinking; we shall not merely adopt or expound, we shall not even be content merely to develop, we shall *account for* the great systems or the typical formulas of ancient or modern philosophy. And this result the really practical and the really scientific man will be the very first to welcome. For even the engineer, yes, even the soldier and the ploughman, will work the better for it; while science will for the first time find itself appreciated and assisted by those who now stand aloof, or appear to the scientific eye to be pursuing unrealities: will indeed be enabled to express itself as never before. We shall in the fullest sense acquire a

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new power of intertranslation with new possibilities of interpretation.

Science is self-confined to the method of measurement. Philosophy is free to use all sane and rational methods. Now science constrains its votaries each to welcome another's re-statement or correction for the development of his thesis. Even as this is written, we find Sir W. Crookes witnessing both to this noble example set us by science and to the power of change in expression. Referring to Dr. Johnstone Stoney's term 'electron,' he says, "thus my early hypotheses fall into order by the substitution of one expression for the other"[1] ('electron' for 'radiant matter').

The true philosophy, like the true science, appeals to intelligence as intelligence; and this appeal embraces the utmost conceivable variety and difference always on the basis, not of separation (except in some cases with a temporary or special object), but of distinction, which, however sharp, is always compatible with unity. The true philosophy comes not to abstract, but to interpret; not to destroy, but to fulfil; not to give mere passive reflection, but to prove itself the creative energy of mind,—a ray of that Light whereby we learn what beauty, what goodness, what love, in brief, what life in its highest sense may be.

[1] *Nature*, February 20, 1902.

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APPENDIX

NOTE I. (A), p. 1.—There are abundant witnesses to this state of things, and to its consequences on the practical side. They are to be found everywhere, and happily testify to an awakening sense of the prevailing failure in the educated world to perceive the principle and point of social and other problems. Among them we may cite a quotation (in a review in the *Times Literary Supplement*, July 4, 1902) from Dr. Shadwell's recent work on *Drink, Temperance, and Legislation*:—

"No question, except finance, has so long, so generally, and so persistently engaged the attention of legislatures; none has been the subject of more experiments; none has been more discussed and investigated. One would have expected some generalisations to have been made about it ere this; but the very latest official investigation, devised upon the largest scale, and entrusted with an inquiry of the broadest scope, spent some three years on it without even betraying the slightest consciousness that there might be any such thing as a principle involved. It is not for lack of material. . . . Surely some general lessons can be drawn from all this mass of material which would raise the question a little out of the chaotic confusion surrounding it, and keep it from being so often the sport of theory, assumption, sentiment, passion, prejudice, and self-interest. The Peel Commission gave no help. It merely took up one question after another, without any plan or order, found them all in an unsatisfactory state, and proposed a long and promiscuous list of amendments, based on no principle and sometimes inconsistent. There is nothing to show that

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these proposals would not repeat past blunders, or would produce any more satisfactory results. What we want to know is, How far and why measures have succeeded or failed; what makes the difference between good and bad legislation; what law can do and what it cannot."

Well may the reviewer add that "it is the method here which is of moment, not its particular application; and we may commend Dr. Shadwell's book specially for its firm grasp and lucid presentation of a sound and rational method." But how often, under the name of 'theory,' this is confounded with mere fad or craze!

Note I. (B), p. 3. — Philology, as dealing with meanings, not roots, has "rich instruction in store for the psychological investigator."[1] "Psychologists seem to be aware of no confusion when they talk indifferently of states of mind, contents of mind, acts of mind; treat the same fact now as a process, now as a product; and range on one level feelings which presuppose presentations and acts which presuppose feelings. . . . Probably all psychological writing, even the clearest, is marked by this varying use of terms, involving incompatible complications, and by surreptitious changes of standpoint."[2] . . . And "process, material, and product are continually confused, because all alike are styled states of consciousness." Everywhere there is "the same inevitable confusion due to an inexact terminology, and an imperfect analysis of the leading term consciousness."[3] And "the wavering and uncertain connotations of such terms as consciousness, feeling, will, volition, state, act, activity, and the like, have rendered any clear issue impossible."[4] After going a little way in amassing facts, Psychology "should revise its fundamental assumptions and improve its language and definitions." . . . It "imperatively demands a well-defined vocabulary."[5] Impression, sensation, idea, image, etc., must all

[1] Jacobs, *Mind*, No. xli. p. 49. [2] J. Ward, No. xlv. p. 48.
[3] *Ibid.* p. 50. [4] *Ibid.* p. 54. [5] Bain, No. xlvi. p. 168-9.

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be rendered free from ambiguity before we know what we mean by association, etc. The reply to attack on the use of terms is that ambiguity cannot be prevented. It is out of the frying-pan and into the fire. It is an old story that "the word 'idea,' as commonly used, is about as ambiguous a term as could well be invented."[1] In our anxiety to get at meaning, to find out "what is symbolised, we actually neglect utterly that which is the symbol, the psychical existence. What is perceived is, in short, significance, meaning. The amount of perception one has, whether as a babe or adult, as layman, or as chemist, is precisely the meaning that one finds signified by one's sensations; the sensations, as such, may be precisely alike in the four cases. Perceiving, to restate a psychological commonplace, is interpreting. The content of the perception is what is signified." "The meaning constitutes for us the whole value of the experience. . . . Even the fact that there *is* an experience, aside from *what* it is, is not the sensation itself; it is the interpretation of the sensation. It is part of the meaning."[2] Here, at least, we find an instalment of the inquiry suggested, and the whole article would from this point of view repay full and searching analysis. "By what process do we interpret sensations so that they become significant to us of objects and events in space and time? These questions are simply the fundamental questions of psychology, and can be answered only by a complete treatise on psychology."[3] Mr. Romanes is reproached for never really defining, when he maintains that animals use 'intentional signs,' what he means by a sign. "He is liberal with his divisions and subdivisions of signs, but he never tells us what he is dividing. He never explains how in the mind of the sign-maker the sign is related to the thing signified, so as to supply a criterion by which to distinguish this relation from other relations, *e.g.* that of means to end. Now it is precisely such a criterion which is needed in

[1] Dewey, No. xlvii. p. 382.
[2] *Ibid.* p. 384.
[3] *Ibid.* p. 391.

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order to estimate the value and import of the evidence adduced in this book to prove that animals use language."[1] I should like to annex this protest on behalf of 'sense and meaning.'

"Philosophy has no nomenclature and no terminology. Every giant and every pigmy states and misstates and restates much as he wills; even babes and sucklings rush abroad brandishing the Infinite and the Absolute with infinite ignorance and absolute conceit. If there is anything fixable why do we not fix it? If any of our conceptions admit of definition, why are they not defined? Such *axiomata media* of philosophy might gain or lose in comparative importance as time went on; but that is true equally of science, which still insists on precision as far as it goes."[2] But "metaphor, and the secret habits of language, are graven upon thought, and have there written vain questions, and false doctrines."[3] In fact "it falls a prey to the sensuous symbolism of itself in language." And "the fictitious clearness which sense holds out, and the ancient associations which bind thought to it, deceive thought as to its own nature."[4] We must distinguish Expressive, Suggestive, and Substitute Signs. A suggestive sign is used "not as a means of expressing a *meaning*, but only as a mnemonic help;" whereas "an expressive sign . . . is a means of attending to its signification." The meaning of a word is not an image, and therefore not an immediate object of attention; but "Expressive Signs invest the meanings which they express with a peculiar kind of salience." They "differ from substitute signs in a manner exactly the inverse of that in which they differ from suggestive signs. . . . A substitute sign is a counter which takes the place of its meaning." That is, "a word is an instrument for thinking about the meaning which it expresses; a substitute sign is a means of *not* thinking about the meaning which it symbolises." It is perhaps not necessary

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[1] G. F. Stout, No. liv. pp. 263-64.
[2] J. Ward, *Mind*, No. lviii. p. 226.
[3] Shand, No. lix. p. 372.
[4] *Ibid.*

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that "there should be an identical element of meaning pervading all the applications of a word. Moreover, this common element, in so far as it does exist, cannot be called a *meaning* of the word in the same sense as the occasional signification." And "the 'usual' or 'general' signification is not in itself one of the significations borne by a word. It is a condition which circumscribes within more or less vague and shifting limits the divergence of occasional meanings." Would not this repay more extended treatment? *E.g.*, if a general and usual signification is not a meaning, is it ever a *sense?* "In order to fix the occasional meaning of words" we need a cue; but permanent change of meaning arises from a gradual shifting of limits.[1] "Nine-tenths of the psychological treatises in vogue —and they are a bewildering multitude—after a most *jejune* and beggarly pretence at the analysis of mind in the concrete, as the reader knows it, plunge at once into what they are pleased to call their scientific exposition. The notorious result is that the whole subject is turned topsy-turvy; an utterly false conception is given of the nature of sensations and ideas; and the essential unity and continuity of conscious life is regarded as something mysteriously superinduced upon its elements. . . . It is fearfully hard to define what we mean by Subject, Object, Presentation, Feeling, Judgment, Belief, Memory, Volition; but, till these and cognate conceptions are clear and distinct, psychology must be at a standstill, let psychophysics advance as much as it may. The true position of affairs, indeed, at the present time seems rather to be that psychology proper is stranded altogether, while psychophysics carries her flag."[2] And "there must be some vagueness in the use of the word 'know' when sane and reputable thinkers make such opposite statements."

Moreover, "we cannot further clear the ground without dislodging whatever is fixed and definite in that sand-heap of

[1] G. F. Stout, No. lxii. p. 186, etc.
[2] J. Ward, No. 4 (N.S.), pp. 532-37.

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a term — consciousness."[1] It has a different meaning as Content and as State: which makes confusion. We are dominated by mechanical metaphor. The distinction between conscious and self-conscious as a source of confusion "is perhaps without a parallel in the history of knowledge." Thus we realise "the fatal clumsiness of our terminology."[2] "All such terms as object, presentation, intuition, apprehension, impression, attention, involve, literally taken, a spatial immediacy, so to say. Why a relation that is actually more fundamental than spatial relations should so invariably be conceived by the help of spatial metaphor is in itself an interesting enough inquiry. . . . After the term consciousness, sensation is perhaps the most hopeless in all our psychological vocabulary."[3] "I do not, of course, want to cut Psychology to fit a terminology; and if it be the general opinion that the science is not yet ripe for exact definitions, I shall be content to wait. But though premature rigidity is bad, the present fluidity seems worse. Secondly, it may be argued that the separation of elements from concrete processes involves a waste of good terms. But this separation is of very great educational importance; students tend constantly to confuse the two things. And if we go on working at Psychology synthetically — a course which, *pace* Professor James, seems just now the most promising — it becomes a matter of necessity."[4] "All philosophical criticism concerns itself with the implications or legitimate consequences of a statement rather than with the meaning which the statement presumably bore to the thinker who gave it currency. This is why philosophical polemic bandies about so freely the charge of 'absurdity.' . . . What was qualified in the mind of the original thinker by a multitude of unspoken considerations, comes to be taken by his less intelligent followers in its bare, unqualified literal-

[1] J. Ward, *Mind*, No. 5 (N.S.), pp. 61, 62.
[2] *Ibid.* pp. 63, 64. [3] *Ibid.* p. 66. [4] Titchener, No. 6, pp. 286-87.

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ness as an absolute verity."[1] Perhaps the time may not be distant when only the follower who is too stupid and too ignorant to be worth notice will be likely to make such a mistake. For surely it is in part at least owing to the absence in education of any definite warning as to the true nature of 'meaning' and the futility of ideas of this kind.

Note II., p. 6.—After pointing out that combinations of numbers, such as 5 minus 9, are "wholly destitute of meaning" —or rather of sense — Hermann Schubert (*Mathematical Essays and Recreations*, p. 12) asks, "What, then, is to be done? Shall we banish entirely from arithmetic such meaningless combinations of numbers; or, since they have no meaning, shall we rather invest them with one? If we do the first, arithmetic will still be confined in the strait-jacket into which it was forced by the original definition of number as the result of counting. If we adopt the latter alternative we are forced to extend our notion of number. But in doing this we sow the first seeds of the science of pure arithmetic, an organic body of knowledge which fructifies all other provinces of science."

So now we are extending our notion of meaning by recognising it as the universal fructifier. And what is meaningless (or senseless) on a narrower basis is often highly significant on a broader one. We have to consider the sense in which *e.g.* we use number, the meaning of number operations, and the signification of numeration. When a new sign was needed, instead of remaining, as we now do, helpless, the Hindoos provided (and accepted) the symbol *tsiphra*, empty, whence our 'cipher.' But the o has now become the international symbol. Thus the province of numbers is widened. But here we see an instance of the absurd defects of usage. We use this very sign for zero, null, to express, in long cumbrous rows, additions by ten, which itself is symbolised by 10! The following taken at random may illustrate this absurdity:—

[1] Seth, No. 9, pp. 5, 6.

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The Thirty-Six Problem.—"Mr. William Schooling writes: 'It is scarcely kind to your readers to propound to them such a problem as this. You might at least have warned them that the thirty-six officers can be arranged in about 372,000,000,000,000,000,000,000,000,000,000,000,000,000 different ways, out of which we are expected—or not expected—to find one way which meets the conditions of the problem. If each man, woman, and child in the world worked out a different arrangement every second, it would take nearly 8,000,000,000,000,000,000,000,000 years of unceasing labour to exhaust the possible combinations" (*Westminster Gazette*, March 25, 1902).

Note III., p. 15.—"In Spenser and in Surrey we find the useful word 'revested'—'The pleasant spot revested green,' but how few modern authors have availed themselves of it. It is still, however, a recognised word. This can hardly be said of 'fromward,' which is also used by Surrey. We have 'toward,' 'hitherward,' and so on; why not 'fromward'? In bidding us prepare for disappointment of our hopes, old Thomas Fuller warns us to 'forethink what may come hereafter.' We still 'foresee'; why should we not 'forethink'? If in want of a synonym for 'sorrowful' why should we not remember the 'grieful pains' of Tubervile's lover, who, in another poem, speaks of his bed as once a 'restful,' but now a 'careful' place! Here are two antithetical words, one of which we have retained while discarding the other, except in its sense of wary or cautious. I think it is Mill who says that it may be good to alter the meaning of a word, but that it is bad to let any part of the meaning drop" ("A Few Words about Words," W. Cairns, *Literature*, September 8, 1900).

Note IV., p. 19.—It may be well here to quote from a striking illustration of what may be thus hoped for, given in an article on "Naturalism and Musical Æsthetic," by Matthew Shirlaw, *Monthly Review*, February, 1901:—

"With the growth of thought and, consequently, of feeling,

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came the demand for a fuller means of expression; this was obtained by the discovery of Harmony, without which it is difficult to imagine how the Art of Music could have been developed to any appreciable extent. The manner in which Harmony was evolved is particularly interesting and noteworthy. . . . But all the above intervals, which form the entire basis of the modern system of harmony, *really existed in the first musical tone produced by the human voice.*"

"If, then, we find in the art of music all the evidences of an organic growth, if from the two elements of sound and rhythm there has been slowly evolved through the course of the centuries a musical creation, bewildering in the variety and multiplicity of the forms in which full, rich life is pulsating, a parallel growth must also be looked for in the mental conditions from which such a variety of phenomena originated.

"New and larger means of expression were the necessary outcome of a greater scope and complexity of thought and feeling. The old bottles no longer sufficed for the new wine, and technique grew, not because it was an end in itself, but because it was the means to an end."

"Mr. A. J. Balfour compares music in its psychological development to the ever-increasing flood of the Amazon, and speaks of the 'gathered waters' of numberless tributaries which have helped to swell 'the tide of music's golden sea, setting towards eternity.' This is the very simile we want. Let us apply it to the argument. Mr. Balfour makes clear in the context that by 'gathered waters' he means new experiences, and asks where in music such experiences are to be found. The answer is, that the same forces, the same experiences which have borne and are bearing on the development of man, have also borne and are bearing on the development of music. From the time that man was first enabled to attach æsthetic value to sound, up to the latest creations of musical genius, there has been a constant growth in the technique of the art of music, because, with the growth of experience came a growth

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of thought and feeling, and the consequent necessity for a new and fuller means of expression."

Note V., p. 21.—"An isolated fact may merely arouse the inquisitiveness of a modern child, for his conduct is controlled by the care of those who are more experienced; but to the man who has to face the consequences of his own actions it means danger, for it may at any moment result in injury or death. His position may be compared to that of some stranger who has wandered into a gigantic foundry and workshop. He can hardly touch anything without a risk of being burnt: he does not know where he can stand without being knocked down: at any moment he may be crushed by a steam-hammer, blinded by a spark, or swept away by a revolving band" (*Empirical Logic*, Venn, pp. 492-93; 1889). (1)

"Some persons hear low sounds more easily than high ones, and *vice versâ*. This may be so pronounced as to justify the subjects being spoken of as deaf to low or high tones respectively, a condition which may be compared in a general way to colour blindness" (*Text-Book of Physiology*, Sir M. Foster, part iv. p. 1363; 1891). (2)

"Notice only that the relation of clear to obscure ideas furnishes an obvious analogy to that of objects distinctly or indistinctly seen in the field of vision; and that it is therefore natural to refer the distinction of perception and apperception to consciousness itself, just as in external vision we account for the different degrees of distinctness by reference to differences in acuteness of vision in different portions of the visual field" (*Human and Animal Psychology*, Wundt, pp. 244-45; trans. 1894). (2)

"What present defects have we *here* and *now*, and to what dangers are we exposed? is the form which the practical question must take with us. To illustrate, I would say that one of our chief dangers in these days is the over-instruction of willing and ingenuous boys. We are in the very midst of

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what will afterwards be designated the information and examination epoch of Education. We are in danger of confounding the faculty for swallowing with the faculty for digesting. To borrow words from biological science, we sometimes proceed as if the mind of man grew by accretion and not by intussusception" (*The Training of Teachers*, S. S. Laurie, p. 22; 1901). (2)

"If a simile may be allowed, the difference between Semitic and Aryan writing is very much that between the more bony framework of the skull and the living human face, with its infinite power of expressing the most varied emotions" . . . (and with all its ambiguity) (*The Alphabet*, Isaac Taylor, vol. i. p. 166; 1883). (2)

"If once more we consider the whole process of natural selection, how it operates through the complicated interaction of the different laws of Inheritance and Adaptation, we shall recognise not only divergence of character, but also the perfecting of structure to be the direct and necessary result of it. We can trace the same thing in the history of the human race. . . . If man wishes to understand his position in nature, and to comprehend as natural facts his relations to the phenomena of the world cognizable by him, it is absolutely necessary that he should compare human with extra-human phenomena, and, above all, with animal phenomena" (*The History of Creation*, Haeckel, vol. i. pp. 318-19; 1892). (3)

"The analogy between the systole and diastole of the heart, and the waking and sleeping of the brain, may be profitably pushed to a very considerable extent" (*Text-Book of Physiology*, Sir M. Foster, part iv. p. 1552; 1891). (4)

"The vital statistics of a population are those of a vast army marching rank behind rank, across the treacherous table-land of life. Some of its members drop out of sight at every step, and a new rank is ever rising up to take the place vacated by the rank that preceded it, and which has already moved on. The population retains its peculiarities, although

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the elements of which it is composed are never stationary, neither are the same individuals present at any two successive epochs. In these respects a population may be compared to a cloud that seems to repose in calm upon a mountain plateau while a gale of wind is blowing over it. The outline of the cloud remains unchanged, although its elements are in violent movement and in a condition of perpetual destruction and renewal. The well-understood cause of such clouds is the deflection of a wind laden with invisible vapour, by means of the sloping flanks of the mountain, up to a level at which the atmosphere is much colder and rarer than below. Part of the invisible vapour with which the wind was charged becomes thereby condensed into the minute particles of water of which clouds are formed. After a while the process is reversed. The particles of cloud having been carried by the wind across the plateau, are swept down the other side of it again to a lower level, and during their descent they return into invisible vapour. Both in the cloud and in the population there is, on the one hand, a continual supply and inrush of new individuals from the unseen; they remain a while as visible objects, and then disappear. The cloud and the population are composed of elements that resemble each other in the brevity of their existence, while the general features of the cloud and of the population are alike in that they abide" (*Natural Inheritance*, Francis Galton, pp. 164-65; 1889). (4)

"Suppose that you have a clock whose movement can at any moment be arrested or started by the throwing in or out of gear of some mechanical appliance, say a spring, which stops the works or not according as it is tightened or relaxed. So long as it is tightened the weight which moves the clock will be exerting a pressure against it. This represents the stresses to which the mechanism is subject. As soon as it is relaxed these are transformed into energy of motion. To effect the relaxation some small sum of work must be expended. Its magnitude will be proportional to the resilience of the

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elastic spring, and it can very easily be increased or decreased by varying the tension of the spring.

"The movement of the clock in this illustration is the reflex movement, the relaxation of the spring is the operation of a sense-stimulus, and the greater or less tension represents the influence of the substances which are exerting a specific action upon the mechanism of transformation of energy. Just as a greater tension of the spring increases the difficulty of starting the clock, so the alteration produced by opium in the nervous system makes against the release of a reflex movement; and just as a less degree of tension facilitates the starting of the clock, so strychnine facilitates reflex movement. Every clock goes for a certain period, at the expiration of which it runs down and requires to be rewound; in other words, there is in it a certain amount of potential energy which it takes a definite time to use up and transform into energy of motion, and which then requires renewal. Without this renewal the clock cannot go any more. Here again there is a complete analogy with the mechanics of the nervous system" (*Human and Animal Psychology*, Wundt, p. 123; 1894). (4)

"It was necessary, in order to be intelligible, to translate certain processes of what we may call mental mechanics,—certain association-processes,—into the language of logical thought. Logical thinking is the form of mental activity with which we first become directly acquainted in our internal experience. And so it offers a ready means of making clear the connection of separate elements in a mental process, although the process itself may not belong at all to the sphere of logical reflection. But we must be careful. The logical formulæ which we often find so useful in explaining the connection of mental processes must not be confused with the processes themselves" (*Ibid.* p. 142). (4)

"The removal of smoke is a problem not dissimilar in its fundamental character from that of the removal of sewage, and in what I have to say I keep in view the analogy that exists

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between the elements of these two problems. I choose the problem of the removal of sewage for this purpose because it is a problem in which sanitary reformers have achieved gradual but conspicuous success during the nineteenth century, and even within the memory of the present generation, to the great advantage of the whole community.

"In all matters concerning the disposal of refuse, we progress by slow degrees from an individualist to a socialist point of view. Occasional illustrations of reckless indulgence of the extreme individualist view as regards the disposal of other forms of refuse might be quoted, and at this day it is no great exaggeration to say that we all act with similar recklessness with regard to our smoke; we throw it into the atmosphere and leave to beneficent chance the question whether or not it injures our neighbours.

"In large towns we have travelled very far in the path of development from the original instinct as regards the problem of the disposal of sewage-polluted water, but there has been no corresponding progress in the disposal of smoke-polluted air" ("The Treatment of Smoke," Dr. W. N. Shaw, *Nature*, October 30, 1902). (4)

"Just as visual impulses can be excited by light only through the mediation of the retina, so auditory impulses can be excited by sound only through the mediation of the auditory epithelium; but here the analogy between the optic auditory nerves seems to end" (*Text-Book of Physiology*, Sir M. Foster, part iv. p. 1314; 1891). (5), see also (6)

"It is obvious that a very complete analogy exists between the taste-buds and the endings of the olfactory nerve" (*Ibid.* p. 1395). (5 a)

"For just as the investigation of Nature from Galileo to Newton directed its energies toward finding out the simple fundamental form of corporeal motion, to which all complex structures of outer experience could be reduced, so Descartes desired to establish the fundamental forms of psychical motion,

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out of which the multiplicity of inner experiences would become explicable" (*History of Philosophy*, Windelband, p. 412, trans. 1893). (5)

"We may infer that (nascent vision) amounts at first to little more than anticipatory touch; and that so there is established in the organism a general relation between visual and tactual impressions, corresponding to the general relation between opacity and solidity in the environment. Be this as it may, however, it is clear that an incipient faculty of sight, though the vaguest imaginable in the sensations it gives, and the most limited that can be conceived in range, implies not only some extension of the correspondence in space, but a new order of correspondence" (*Principles of Psychology*, H. Spencer, vol. i. p. 315, 3rd edit. 1881). (6)

"In the histons the sociably connected cells are dependent upon one another and upon the whole organism, and are so all the more, the more highly developed the organism is, *i.e.* the more strongly it is centralised. Hence the one-celled Protist stands in much the same relation to the many-celled and tissue-forming histon as a single man does to the community. The many-celled organism is a community of cells, and its single cells are the members of the community" (*The History of Creation*, Haeckel, vol. i. p. 294; 1892). (6)

Note VI., p. 27.—Words like 'consciousness, sensation, feeling, mind, thought, will,' wander and collide in the endless cross-currents of 'meaning.' Every psychologist deplores this and recommends his own usage. But there is no consensus and therefore no consistency or real advance. Meanwhile, surely 'sensation'—varying in degree and in kind—supplies us with the natural starting-point. Virtually it is already this. For we begin with a vague 'sense' which is a response to stimulus. This becomes gradually more conscious, rising to that level which we may call 'feeling,' and involving more and more definitely that which we call 'mind'; a word which in its turn suggestively connotes in popular usage will, desire, intention, memory.

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Thus, as the first simplicity of Sense differentiates into 'special senses,' and we gain the widely varying response-types which we call touch (including smell and taste), hearing, and sight; so the first simplicity of 'sense' as the guarantee of sanity, the individual's right response to the stimuli of the physical world (resistance, temperature, etc.), differentiates into the special 'senses' in which we apprehend, analyse, act upon what we learn to call (1) fact, (2) truth, and at last reach, or at least recognise, as Reality. This is not a mere question of etymology, which indeed would be but a broken reed to lean upon. It is a question of unconsciously developing mental habit; of 'instinct' growing into volitional maturity and *revealing itself in language.* This revelation is, of course, as yet vague and shifting. But when it is seriously investigated and properly interpreted: when our usage becomes orderly and progressive (as, except in this solitary case of language, all our developed energies passing under the control of intelligence and reason tend to be), then we shall find many 'impossibilities' quite feasible, and many things now 'beyond words' clearly expressible.

Note VII., p. 36.—It is curious—and perhaps significant—that in the able and eloquent Presidential Address of Professor Forsyth to the British Association, August 1897, he almost exactly describes one aspect of the value of Significs. "I do not know of any canonical aggregate of tests which a subject should satisfy before it is entitled to a separate establishment; but, in the absence of a recognised aggregate, some important tests can be assigned which are necessary, and may, perhaps, be sufficient. A subject must be concerned with a range of ideas forming a class distinct from all other classes; it must deal with them in such a way that new ideas of the same kind can be associated and assimilated; and it should derive a growing vigour from a growing increase of its range. For its progress it must possess methods as varied as its range, acquiring and constructing new processes in its growth; and

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new methods on any grand scale should supersede the older ones, so that increase of ideas and introduction of new principles should lead both to simplification and to increase of working power within the subject. As a sign of its vitality it must ever be adding to knowledge and producing new results, even though within its own range it propound some questions that have no answer and other questions that for a time defy solution; and results already achieved should be an intrinsic stimulus to further development in the extension of knowledge. Lastly, at least among this list, let me quote Sylvester's words:—'It must unceasingly call forth the faculties of observation and comparison; one of its principal methods must be induction; it must have frequent recourse to experimental trial and verification; and it must afford a boundless scope for the highest efforts of imagination and invention.' I do not add as a test that it must immediately be capable of practical application to something outside its own range, though of course its processes may be also transferable to other subjects, or, in part, derivable from them. All these tests are satisfied by pure mathematics; it can be claimed without hesitation or exaggeration that they are satisfied with ample generosity." After illustrating this position by reference to two or three branches, Professor Forsyth concludes:—"What has been said may suffice to give some slight indication of the vast and ever-widening extent of pure mathematics. No less than in any other science knowledge gathers force as it grows, and each new step once attained becomes the starting-point for steady advance in further exploration. Mathematics is one of the oldest of the sciences; it is also one of the most active, for its strength is the vigour of perpetual youth."

But while the ideas summed up in sense, meaning, and significance (but also expressed as import, purport, signification, etc.) must in a narrow sense constitute a special subject, in a wider one, they constitute that very value which is common to all subjects "sifted and rationalised—in fact, organised into truth."

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Note VIII., p. 39. — A good illustration of the present chaotic use of metaphor is found in a letter to the *Pilot* (July 19, 1902), signed E. D. Stone :—

"In an obsolete Latin exercise book, full of wit and wisdom . . . are sentences somewhat to this effect: 'As the scum rises to the surface of the pot, so the worst men take leading parts in a revolution'; 'As the cream mounts to the surface of the milk, so the best men take the lead in the State'; 'One of these metaphors is as good as the other.' I was reminded of this by a phrase in the last number of the *Pilot*, vituperative of Sir W. Anson's amendment 'giving the exclusive support of the community to a religion which is in principle the *residuum* of all religions.' 'Residuum' at once calls up the idea of 'dregs' and 'lees,' matter offensive and feculent which sinks to the bottom. But substitute for it 'quintessence,' regard it as that which remains solid and insoluble, when the lighter and less essential elements have evaporated; look on it as the refined gold, when all drossy matter has been extracted, and that at once becomes precious which from the other point of view was contemptible. Is it certain that that which appeals to all men alike is not the very essence and soul of religion?

"Here is another well-worn metaphor, trotted out invariably when strong doctrine is assailed. The assailant is said to be 'watering it down.' But how, if the strong liquid, fiery and intoxicating, is not only unpalatable, but unwholesome and poisonous without the admixture of water, though with it a potent and healing medicine?"

Note IX., p. 42. — Huxley's metaphors almost always bear scrutiny. Take the passage, "Hume does not really bring his mature powers to bear upon his early speculations, in the later work. The crude fruits have not been ripened, but they have been ruthlessly pruned away, along with the branches which bore them. The result is a pretty shrub enough; but not the tree of knowledge, with its roots firmly fixed in fact, its branches perennially budding forth into new

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truths, which Hume might have reared." This is a really illustrative adoption of one of the most ancient metaphors we have. But sometimes he too trips—unless, indeed, we may class his apparent bulls among intentional paradoxes, as when he speaks of 'auditory spectra.' His use of the misleading metaphor 'state' of consciousness betrays its absurdity, and one wonders that he did not think it worth while to expose its deceptive influence. After accepting the metaphor of the anatomy of Mind, he says, "the psychologist dissects mental phenomena into elementary states of consciousness, as the anatomist resolves limbs into tissues, and tissues into cells. The one traces the development of complex organs from simple rudiments; the other follows the building up of complex conceptions out of simpler constituents of thought." But obviously there are 'states'—healthy and active, congested or atrophied, etc.—of organs or the muscular system, etc. And mental states must, to be relevant at all, correspond to these. Instead of which, even Huxley is content to use 'state' as equivalent to 'cell,' or whatever we take as the 'simplest rudiment' of the body. How curious it is that the accurate scientific mind should have borne so long with what is really the popular muddle of calling the analogue of a 'rudiment' or of a 'cell' a 'state'! For in this way, be it noted, we lose the true use of 'state' in the mental sphere. The constituents of Mind, or the Mind as a whole (if we may use the analogy at all), must be in a healthy or a morbid 'state,' in an active or passive 'state,' and so on; and a recognition of this could not fail to clear our ideas, so long as we use the universal analogy between 'body' and 'mind.'

Mr. Hanns Oertel is rightly severe on "the ill-advised and misleading metaphors in which linguistic writers (have) indulged, borrowing their terms from the dissecting-room and the physiological and biological laboratories. All language is so fraught with metaphors that even with constant care a wrong suggestion cannot at times be avoided. But in scientific

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work the harm of figurative phrases is incalculable, however much it may serve to brighten the style and impress upon it the mark of brilliancy. Nothing, indeed, is more dangerous than the use of figurative terms which seem so apt that they cause the reader to forget the figure" (*Lectures, etc.*, p. 59). This needs conversely a warning against the use of inapt figure which sways the reader's mind by calling up the wrong image. For very few readers have been trained to criticise automatically the 'aptness' of imagery. Let us see, however, how far the writer has himself protected us against the incalculable harm in scientific work of figurative phrases.

On p. 20 of the same work we find "that either the creative fancy, scorning a solid masonry of facts, builds its castle in Spain without carpenter and architect, or a hesitating exactness may become the fetish to which the children of the imagination are sacrificed." On p. 81, linguistic symbols are "used as a supporting trellis around which the latter (the mental life) grows up." On p. 84, Psychology is a 'clearing-house.' On p. 89, the historical and the judicial attitudes "run parallel as it were" (clever of the attitudes). On p. 90, speech is "the raw material from which literature is hewn." On p. 91, the 'rank' of a phrase is determined "by the company it keeps and the place where it was born." Comment is needless. On p. 60, we are told of metaphors taken 'literally' and leading to confusion; being "interesting instances of the reaction of word upon thought." There is no doubt that metaphors react much more strongly than we usually suppose upon thought; but who ever took metaphor 'literally'? What we do is to take it as *relevant*, as *fitting*, as *descriptive*, as conveying an actual resemblance or correspondence. And when this is really the case, even scientific, like all other work, only gains by its use.

Note X. (A), p. 51. — The pregnant remarks of Mr. Schuster at Belfast apply here:—"There is . . . a very real danger that the importance of observation misleads us into

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mistaking the means for the end, as if observation alone could add anything to our knowledge. Observation is like the food supplied to the brain, and knowledge only comes through the digestion of the food. An observation made for its own sake, and not for some definite scientific object, is a useless observation. Science is not a museum for the storage of disconnected facts and the amusement of the collecting enthusiast. I dislike the name 'observatory' for the astronomical workshop, for the same reason that I should dislike my body to be called a food receptacle. Your observing dome would be useless without your computing room and your study. What you want is an Astronomical Laboratory, a Meteorological or Magnetic Laboratory, attaching to the word 'laboratory' its true meaning, which is a workshop in which eyes and hands and brains unite in producing a combined result" (Opening Address, Section A, Brit. Assoc., by A. Schuster, F.R.S., etc., 1902).

Mr. L. Ward has some suggestive passages in the same sense (*Outlines of Sociology*, 1898):—" . . . None of the more complex and less exact sciences can be properly understood until after all the simpler and more exact ones below it have first been acquired. . . . But the important qualification should be made that this canon does not imply a mastery of the details of these sciences, but only a comprehensive grasp of their principles" (p. 19), for "the environment transforms the animal, while man transforms the environment" (p. 81). Apply this to the 'submerged tenth' of science: the ultra-specialists. " It may have a discouraging sound to say that in order to be properly prepared for the study of sociology one must first be acquainted with mathematics, astronomy, physics, chemistry, biology, and psychology, but when it is clearly understood what is meant by this it loses much of its formidableness. For it has never been maintained that it is necessary to become a specialist in all, or even in any of these sciences. It is only essential to have a firm grasp of the leading principles of all of them, and of

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their relations one to another. It would be far better to devote time to this aspect of each of them than to mastering the details, as is so largely done in the present system of education" (pp. 118, 119).

(B), p. 59.—A curious commentary on the present specialising tendency of knowledge may be found in the *Times* report of the dinner (Nov. 21, 1902) to the editors and contributors to the *Encyclopædia Britannica*. Mr. Balfour said: ". . . Without going back to medieval or to ancient times, I think that everybody will admit that there was a moment . . . in which it was possible to gather within the compass of the knowledge of one man all that was known, that was worth knowing, in every branch of philosophy, theology, and, I think, of science and of politics. . . . At present I suppose it is possible for a man to be a specialist in his own branch of study, and yet to have some working knowledge of the method and of the results which have been added in all the other great, or in many of the other great, departments of human learning. What will it be in some generations hence? I am almost glad that I shall not live to see that day—a day at which, I suppose, the specialist will have an enormous and almost unutterable contempt for the generaliser . . . who attempts to bring within the compass of one survey and one view the general results of human knowledge; and where the generaliser will himself feel lost in the mass of knowledge, the mass of detail which will meet the student in every branch of knowledge who really intends to master its secrets. I suppose the future generations will look after themselves, and that . . . the problem of the future will be solved by some method at present unforeseen which will prevent students being wholly lost in the details of some highly specialist study." Yet a few minutes earlier the Speaker (Mr. Gully) had remarked that Mr. Bryce was, "as they all knew, a walking encyclopædia." The *Times* itself went even farther in anticipating the virtual collapse of knowledge through its own development, and told

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us that "in the future it will be more and more difficult for anybody, except a specialist, to say anything about any subject, while the specialist will have very little chance of knowing anything outside his own department. This narrowing tendency is inevitable, since knowledge is not only enlarged in its area, . . . but is so microscopically specialised that each small part of it represents the labours, not of a lifetime only, but of many lives. There is something sad in this which quells the pride of human intellect." Poor human intellect! Happily, Mr. Balfour at least left it a loophole by which to creep from its gloomy tomb. Every one knows the story of the man who excused himself from joining in conversation on the plea that his attention was entirely concentrated on his life's work,—the study of the hairs on the thirty-eighth left leg of a particular kind of centipede. Perhaps it is less well known that he was promptly capped by another specialist present, who was, as he explained, exclusively devoted to the study of the wink observed in the right eyelid of the Anopheles as it dived under the net of a new comer to Sierra Leone. Let us hope that in the future some one who has with the same enthusiasm taken up the study of Significs, may be able to provide that very method for which Mr. Balfour pines.

Note XI., p. 59.—The following passages in Prof. Cunningham's address to the Anthropological Section of the British Association at Glasgow, 1901, are here instructive:—"I have already mentioned that man's special endowment, the faculty of speech, is associated with striking changes in that part of the cerebral surface in which the motor centre for articulate speech is located. It is questionable whether the acquisition of any other system of associated muscular movements has been accompanied by a more evident cortical change. . . . During the whole course of his evolution there is no possession which man has contrived to acquire which has exercised a stronger influence on his higher development than the power of articulate speech. This priceless gift, 'the most

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human manifestation of humanity'—(Huxley)—was not obtained through the exertions of any one individual or group of individuals. It is the result of a slow process of natural growth, and there is no race, no matter how low, savage, or uncultured, which does not possess the power of communicating its ideas by means of speech. 'If in the present state of the world,' says Charma, 'some philosopher were to wonder how man ever began to build those houses, palaces, and vessels which we see around us, we should answer that these were not the things that man began with. The savage who first tied the branches of shrubs to make himself a shelter was not an architect, and he who first floated on the trunk of a tree was not the creator of navigation.' And so it is with speech. Rude and imperfect in its beginnings, it has gradually been elaborated by the successive generations that have practised it. . . . I think we may conclude that the acquisition of speech has been a dominant factor in determining the high development of the human brain. Speech and mental activity go hand in hand. The one has reacted on the other. The mental effort required for the coining of a new word has been immediately followed by an increased possibility of further intellectual achievement through the additional range given to the mental powers by the enlarged vocabulary. The two processes, mutually supporting each other and leading to progress in the two directions, have unquestionably yielded the chief stimulus to brain development." Do we then find, as we should reasonably expect to find, that the immense development of human experience during the last few centuries has followed this order of rising expressiveness in speech?

In Prof. Clifford Allbutt's admirable Boyle Lecture for 1902, after citing certain passages from Boyle's writings, he says: "We are apt, perhaps, to undervalue such reasoning because of the oddity, to us, of the technical terms used, but we shall remember that scientific nomenclature was then in an

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early stage of making, and that many words to which we are now accustomed are no better, some of them indeed worse, than those in use two hundred and fifty years ago." Do we really feel no surprise or shame at such stagnation and even degeneration, not among the illiterate, not in vulgar journalism, but in the very strongholds of intellectual advance?

After using the needed word 'neurergic,' Mr. H. R. Marshall (*Mind*, October 1902, p. 479) actually apologises in the footnote and begs the reader to pardon him! Strange indeed that we should ask pardon for evolving by volition (not 'coining') a fresh means of distinctive expression. The apology should rather be for *not* doing it where needed.

A striking example of the despair of language is found in the last paragraph of A. de Morgan's *Study of Mathematics*: "These algebraic relations between the sides and content of a rectangle or parallelepiped were observed by the Greek geometers; but as they had no distinct science of algebra, and a very imperfect system of arithmetic, while, with them, geometry was in an advanced state; instead of applying algebra to geometry, what they knew of the first was by deduction from the last: hence the names which, to this day, are given to *aa*, *aaa*, *ab*, which are called the *square* of *a*, the *cube* of *a*, the rectangle of *a* and *b*. The student is thus led to imagine that he has proved that square described on the line whose number of units is *a*, to contain *aa* square units, because he calls the latter the square of *a*. He must, however, recollect that squares in algebra and geometry mean distinct things. *It would be much better if he would accustom himself to call* aa *and* aaa *the second and third powers of* a, *by which means the confusion would be avoided. It is, nevertheless, too much to expect that a method of speaking so commonly received should ever be changed*" (italics mine: V. W.); "all that can be done is, to point out the real connection of the geometrical and algebraical signification. This, if once thoroughly understood, will prevent any future mis-

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conception." Yes; but think at what needless cost! Suppose we used 'milk' to mean also cream and butter. No doubt a knowledge of the facts, a study of context, etc., would prevent any future misconception. But it would be a senseless waste of attention.

Note XII., p. 66.—A curious instance of the lack of what Significs applied to education would supply, that is, an almost unerring mental scent for the true sense of things, may be found in the following extracts:—

"Mr. Mark Pattison, one of the acutest minds of modern Oxford, rather oddly says that the idea of Deity has now been 'defecated to a pure transparency.' The evolution philosophy goes a step farther, and defecates the idea of cause to a pure transparency. Theology and ontology alike end in the everlasting No with which science confronts all their assertions. But how whimsical is it to tell us that religion, which cannot find any resting-place in theology or ontology, is to find its true home in the Everlasting No! That which is defecated to a pure transparency can never supply a religion to any human being but a philosopher constructing a system. . . . A religion . . . which is summed up in one dogma—the Unknowable is everywhere, and Evolution is its prophet—this is indeed 'to defecate religion to a pure transparency.' . . . They are so terribly afraid of an anthropomorphic GOD that they have sublimated Him into a metaphorical expression—'defecated the idea to a pure transparency,' as one of the most eminent of them puts it. . . . You may rout a logician by a 'pure transparency,' but you cannot check vice, crime, and war by it, nor train up men and women in holiness and truth" ("Ghost of Religion," *Nineteenth Century*, March 1884, pp. 496-97, 504-5).

"One luminary of the Church declares that the idea of GOD must be 'defecated to a pure transparency.' Imagine the apostles going out into all lands to preach the name of One 'defecated to a pure transparency'"! (Frederic Harrison,

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"Apologia pro Fide Nostra," *Fortnightly Review*, November 1888). An even more curious case occurs in A. W. Benn's *Philosophy of Greece* (1898): "If, like Hegel, he 'defecated the universe to a pure transparency,' he left it *transparent*: his world is luminous through its entire extent" (p. 87).

The phrase, attributed by F. Harrison to Mark Pattison, "the idea of Deity is defecated to a pure transparency," has been repeated endlessly in the monthly reviews, in *Times* articles, etc. Whereas, as Dr. Shadworth Hodgson kindly informed me in a private letter, Coleridge, who originally used it, meant something entirely different: "Finally, what is Reason? You have often asked me; and this is my answer:—

> Whene'er the mist, that stands 'twixt GOD and thee
> Defecates to a pure transparency,
> That intercepts no light and adds no stain—
> There Reason is, and then begins her reign'" !
>
> (Concluding passage in Appendix to S. Coleridge's *Church and State*, p. 227, 1st. ed. 1830.)

Dr. Shadworth Hodgson adds: "But, alas!

> "tu stesso ti fai grosso
> Col falso immaginar, si che non vedi
> Cio che vedresti se l'avessi scosso."
>
> (Dante, *Paradiso*, Canto I.)"

It may not be out of place to mention here a more ludicrous blunder of the same kind; this time due to the reporter. Everywhere we see that Lord Curzon once spoke of the 'anticipation of events before they occur,' whereas it is well known that the word used was *appreciation*. Yet the blunder goes on, and even starts the introductory essay of the last Plea for Reformed Education (*Essays on Education*, edit. by Laurie Magnus; 1901).

Note XIII., p. 80.—To any one who has even begun to realise the contrast between the present state of language and that which the cultivation of the child's speech instinct would bring about, the ordinary popular book on 'words' is painful

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reading. For most of them contribute fresh cases of confusion, and none of them show any sense of regret or indignation when recording cases of wanton disorder tending to insanity of thought. Insanity of thought: yes, that is really what is fostered by the incoherence of meaning, the welter of sense which now prevails. Why does it never occur to us that in no other case but that of language would such a chaos be tolerated for a moment?

In a representative and well-written American book dating from Harvard (*Words and their Ways in English Speech*, by Greenough and Kittredge, 1902), the authors, after saying that "no phenomenon is more amazing than that of speech" (p. 2) go on to say, "it is profoundly true that 'all language is poetry,'" (p. 6). Now, it is bad enough that we should not be rebuked for speaking of poetry when we really mean verse, and for compelling prose to be prosy and prosaic; at the same time for being content with no other word to express some of the finest poetry in the world,—that of the Old Testament. (The only notice I have seen taken of this absurdity is in an article by Max Beerbohm in the *Academy* called "Wanted a Noun.") But it is even worse when throughout the book we find the metaphor coin and coinage applied to language. Now, except in one well-marked special sense (that of economics), this metaphor introduces the same kind of confusion as if we were to speak of founding a word or building one. For the figure is a clear and insistently pictorial one. We try to make our ideas of a word fit those of a coin, and thus go astray and think awry of language. Our authors speak of the 'marvellous variety' (p. 8) of the meanings of a word. Is there a similar variety in the meanings of a shilling? Again "the field of language is strewn with the dry bones of adventurous words which once started out with the paternal blessing to make their fortune, but which have met with an untimely end . . ." (p. 78). (See also Note XVII.) Is this what befalls coins? "Counters and markers" (p. 235) are nearer the coin idea. Once more, it

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seems that "we owe many words of this class, not to deliberate borrowing of a learned or literary character, but to the haphazard linguistic processes of conversation and daily life" (p. 100). Do we owe coins to haphazard processes, and are these comparable to chemical accuracy? (p. 37). We certainly owe metaphors of this kind to haphazard processes which ought to be exposed, and their confusing and balking effects upon thought emphasised in serious works.

Again, the authors speak (p. 10) of 'deeply moved' etc., as having "ceased to be a metaphor." Every one I have asked confesses, on the contrary, that it calls up images like the 'deep sea,' or a 'deep well,' or a deep voice, or 'deep foundations.' The effect of strong emotion on the visceral regions, originating the common remark 'I felt it deeply,' is well known. And even those who do not consciously associate it thus are still unconsciously swayed by the original (or literal) meaning, as they show in many ways, among them in intonation. It is instructive to ask any one who doubts the subconscious effect of inherited metaphor to read aloud from any handy book, as though addressing an audience, and then stop them as soon as they have shown by the rise or fall of voice, etc., that the associations which they suppose to be quite obsolete are still operative. To say that "language picks out with almost a chemical certainty what is suitable for it, and any language at any moment is a naturally selected residuum of all which the human mind has thought or conceived ever since that line of civilisation began" (p. 37), is contradicted farther on in the same book. Take the case of the passive and impassive, "in which we have the curious phenomenon of a word that is practically synonymous with its contradictory, *passive*" (p. 40). Is this 'chemical certainty'? Or again 'monk,' really one who lives alone, used for one who lives in community, and has indeed resigned individuality so far as this is possible (p. 44). It is true that "there has never been a time in the history of our language when 'syntactical correctness' has ruled with

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so capricious and tyrannical a sway. The proof-reader has become a court of last resort for many of us" (p. 124). When there is need of latitude we are straitly confined: spelling is at once despotic and utterly inconsistent and senseless (especially in English). But where there is pressing need of order, that is, in sense and meaning, there all is left to chance, caprice, accident, although "words, as we know, are but the signs of thought," and "no sooner has an idea been expressed in words than the form of expression reacts on the speaker and influences his subsequent thought. . . . Every one knows how a peculiar or striking phrase, embodying a certain thought, may recur to the memory whenever the thought comes back to us, and thus, by a kind of haunting persistence, make it difficult to phrase the thought otherwise" (p. 125). For 'speech-feeling' "affects every word that we utter, though we may think that we are speaking as the whim of the moment dictates"; language, it is well remarked, insists upon writing itself almost in spite of us (p. 126). "The contest that is still raging over the nature of a 'liberal education' affords very pretty examples of the tyranny of words when the 'term is allowed to govern the meaning,' especially when the term is interpreted awry at the outset. Here, as in so many other wordy combats, the etymon of the Stoics 'umpire sits, and by decision more embroils the fray'" (p. 215). Yet after all this the writer tells us, apparently with complacent satisfaction, that "language develops by the felicitous misapplication of words" (p. 217). Now misapplication can never be felicitous, except indeed where obviously humorous; elsewhere it is always unhappy, like misuse and misunderstanding and mistake. We ought rather to say, So-and-so unconsciously *translated* a phrase which thus revealed the possible enrichment of speech significance. (It would be an excellent exercise for children to do this. But they, and we, must be guarded against the fatal mistake of transferring back to the original phrase the translated meaning.)

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Our writers again declare that "English is full of happy misapplications of words. They should serve as warnings to the puristic pedant, and may, perhaps, encourage aspiring neologists. One caution, however, must in conscience be added. The only safe course is to be sure that the misapplication is so happy that the rest of the world will adopt it" (p. 283). It is a curious question whether if a whole society, in consequence of some brain-poison in the air, took to delirious raving and to gibbering, only a small minority remaining sane, it would be possible to establish the fact at all; since the sane foreigner, if called in, would not be able to judge except of the actions and gestures of the afflicted people. But in fact one could hardly have the matter put more falsely. What other subject could possibly be described thus in serious writing? Think of a lucky hit in ethics, and a happy thought in logic; a 'happy' misfit in emotion, a blunder in sensation (mistaking a touch for a colour), or any other haphazard or random 'miss' which hit nothing but idle fancy. Imagine the musician playing on an instrument out of time and ending on a false note in another key; a painter falsifying his colour and his outline. This would indeed be the reign of monstrosity.

"We have seen how words grow up and how they change their forms. We have examined the machinery which makes new terms by derivation and composition" (p. 219). This does not fit the 'coin' idea! And we are at last told that "the appearance of chance is due merely to our ignorance of the causes that have operated in each case. Such causes may be simple and easily understood, or so complex as never to be discoverable in their entirety. But so long as thought proceeds in obedience to definite laws, language, which is the expression of thought by means of conventional signs, must also obey rules which, if we could discover them, would account for every variation" (pp. 219-20). If we could discover them! Have we ever seriously tried? "In the absolute sense of the term a word has no 'essential' meaning. Words are conven-

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tional signs. They mean what they are intended to mean by the speaker and understood to mean by the hearer. There is no other sense in which language can be properly said to signify anything" (p. 220). Therefore it is plain that if we chose we could acquire complete control over language which now makes a mock of our helplessness and leaves us dumb where we most need expressiveness.

"The associations of words are always shifting, even when the meaning remains unchanged" (p. 225). But it is impossible thus to sever the two. Of course "it is only by taking into account the customs and beliefs that prevailed when a word was made that we can have any just conception of its origin" (p. 232). And false ideas of the origin, say of education and religion, arise from overlooking this. "None of the examples cited has wandered far from its first sense. The development is still very simple, and the chain of meanings is easy to follow" (p. 266). "At any stage of the process a meaning is capable of being treated as if it were the original sense of the word" (p. 267). 'Meaning' is here distinguished from 'sense,' but as the distinction is nowhere alluded to it appears to be unconsciously made. "Descent is easy, and words, like people, show a propensity to fall away from their better selves" (p. 284). But then we hear that our language is "fixed by the conservative forces of literature and education" (p. 285), after which we are given an "extraordinary instance of verbal degradation" (p. 287). And yet no one thinks of feeling ashamed of such desecration of what ought to be to us the sacred gift of language. "Nothing is more democratic than language, or conducts one to more preposterous conclusions" (p. 383). So it appears; and we are curiously content with the preposterous conclusions which duly re-appear in our thought, belief, and conduct. For "words are the signs of thought, and thoughts make history" (p. 389). Is it not, therefore, time that the speaker assumed his rightful authority over speech, and turned it from a tangle

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of scrambling incoherence into the nobly beautiful order of a great man's thinking? For even the great man suffers from being obliged, if he would be understood, to take up the haphazard blunders and figurative falsities which alone pass current among his hearers or his readers. These falsities react upon and discount or silence some at least of the highest of his messages.

There is, of course, much of the highest value to be found in Professor Oertel's *Lectures on the Study of Language* (1902). But at the same time it supplies remarkable evidence of the need, even among experts, of a more thorough analysis and a wider and more consistent study and application of the 'semantic' principle. Surely the first task of this should be an inquiry as to the possible gain in a consistent use of the terms for 'meaning' itself. Instead of this, we find 'meaning' used with all the vagueness of the 'man in the street,' while the surely valuable distinction now pointed out between signification and significance is entirely ignored, as also is the extraordinary width and richness of the connotations of 'sense.'

It is true that such an inquiry, if followed out, would soon transcend the limits both of the Lectures and of English to which my own inquiry is limited. Still, as examples of the chequered history and the varied use of words are given, it seems a pity that words in a true sense the most important of all, should in so able a work receive no attention. One distinction made—that between the 'schematic' and the 'semantic' aspect of grammar—answers to the distinction in Significs between the verbal and the sensal. There is an interesting passage on pp. 280-81:—"How to enable the hearer to recompose the elements in exactly the same manner as the speaker saw them is the chief problem with which all languages have to grapple. When a man speaks he is not stringing one percept to another, he is doing exactly the reverse; he is analysing a compound idea, moulding it, so that it will be articulate (in the true sense of this word, *i.e.* become jointed), and he does this because he cannot transmit

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a compound idea to his neighbour, but can only pass it on to him joint after joint, and leave it to him to put them together." Here again we have the use of an insistent metaphor borrowed from physiology. The hope of producing a mechanically accurate reflection in the hearer's mind of the 'compound idea' in the speaker's is of course and really futile. For in every case there will be a 'personal equation' to reckon with. "The simultaneous presence in mind of the symbols is necessary to obtain the word-picture . . ." (p. 282). Here we see the inevitable drawback of the successiveness of language. We cannot apply this canon in the cases where it is most needed. Thus the peroration of a speech, usually the most rhetorical and least trustworthy part of it, obliterates or weakens its earlier passages; and this can only be corrected by a careful after-study, which too often it does not get.

On pp. 293-4 there is a short discussion of the difference in technical value between 'meaning' and 'function.' But this begins thus: "It is customary to distinguish between the meaning of sound-complexes which stand for names and the meaning of those devices by which the attitude of the speaker and the relations of members of an utterance to each other are indicated. Of the former we use the word 'meaning,' of the latter the word 'function.'" Surely it would have made for clearness if some neutral word like value had here been used. Professor Oertel continues: "The term 'meaning' has thus acquired a narrower semantic sphere, being attached to the treatment of entire words and the domain of lexicography, while the term 'function' has assumed a distinctly grammatical and syntactical value. It may, however, be questioned if such a distinction, which necessarily tends towards separation, is altogether advantageous." Would it not be worth while here to point out that 'meaning' is mainly intention; and that to speak of the 'meaning' of a word or phrase is really a 'shorthand form' for 'what the speaker means, *i.e.* intends to convey' by it? For from this point of view the distinction between

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the two terms becomes intelligible and useful and in no way "necessarily tends towards separation." We miss also any allusion to the 'sense of a word'—*i.e.* that in which it is used; yet this too would help to put the question of the relation of 'meaning' to 'function' on a clearer basis.

On p. 298 we read that "various senses contribute to our percept of an object." And the name denoting that object may likewise be used in various *senses;* a fact often of capital importance in controversial statements, and yet almost universally ignored. To say that a word has many 'meanings' is by no means the same thing. It is true that the "merely injudicious choice of words often prejudices a case, and the emotions stirred up by them rise like a veil between the object and the observer. The ethical valuation of the object is thus predetermined by the name applied to it, a fact which popular philosophy expresses by the proverb: Give a dog a bad name" (p. 302), while the exact opposite is so also. It is likewise true that "a word does not really become a symbol for an idea until it ceases to describe." But would it not be well to remind us here of the difference between sign—which may be, like an inn sign, an actual picture—and symbol? Etymology may indeed be "the weakest and most unreliable staff upon which the lexicographer can lean" (p. 307). But the meaning of a context is as often gathered from a key (or leader) word as that of a word from context. For in no sense do words and phrases "stand isolated in a language." Thus "any change in the meaning of one word frequently disturbs other words which are in some way connected with it, either by encroaching upon their territory or by leaving certain meanings uncovered" (p. 329), and most of all in key words. But these subjects cannot of course be here pursued.

Note XIV. (A), p. 84.—A paper called "Mental Biology," written a good many years ago, but too long for insertion, may perhaps usefully be summarised here. Its object was to call attention to the fact which seems never to have been noticed,

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that the practically universal (because only workable) analogy between 'body' and 'mind' (whether this is, as usual, static, or as the signific view would make it, dynamic) has one fatal defect. This is that whereas on the side of the physical organism we arrive (in its most developed form) at a 'brain' which is somehow the condition of an activity or state called in its lowest forms sense, mind, consciousness, and in its highest rational thought, on the mental side we postulate nothing as *corresponding to* the brain in its capacity of means or condition of the knowledge of body and brain.

On the contrary, we make the figurative 'mind-body'—'know' itself! Now, just as the eye cannot see itself, so the mind cannot 'see' itself any more than matter (*qua* matter) can move itself. Therefore, wherever we speak of 'spiritual phenomena we are inevitably implying an analogue of the material 'brain' with all its implications. Only there is no word for what is not merely 'mind,' as at least the accompaniment of brain-process, but as much more than the mind which is figured as body, as the actual mind is more (in any sense you like) than the actual body. And, unfortunately, (1) the word 'spiritual' has been widely used in superstitious or unsound senses, while (2), as we have already seen, it refers properly to the life or breath, not to that of vision, speech, thought. There is much yet to be said on this subject; but its further treatment must be reserved for the present.

Where is that which is as much greater than consciousness or thought (as we understand them) as the 'conscious' activities of the brain are greater than the mere reflex action of muscle? To make the conception clear we must acquire a word. Meanwhile it would be something to recognise the need.

Note XIV. (B), p. 85.—A good illustration of the physiological field which may well turn out, as knowledge increases, to contain a mine of illuminative expression, is found in vol. 31 of *Encyc. Brit.* (10th edit.), Art. "Pathology," in a note to Fig. 3. "A diagram to indicate afferent, efferent, and association systems

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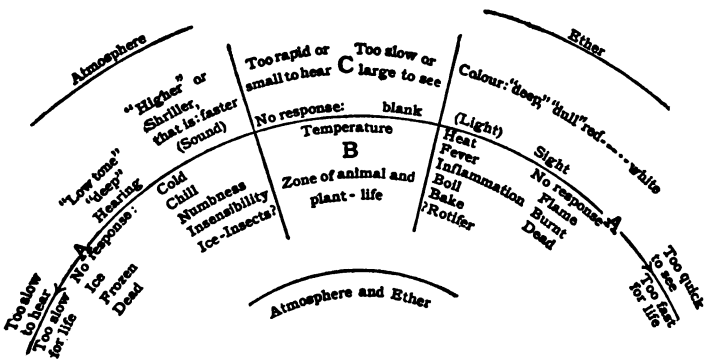
of neurones. It will be observed that there are three nervous circles indicated by the arrows — spinal, cerebellar, and cerebral. In every perfect co-ordinate movement impulses properly adjusted are flowing along these three systems of neurones."

Note XV., p. 89. "Well, now, think what a tremendous chasm there is between the 100 million millions per second, which is about the gravest note, hitherto discovered, of invisible radiant heat, and the 10,000 per second, the greatest number of vibrations perceptible as sound. This is



an unknown province of science; the investigation of vibrations between these two limits is, perhaps, one of the most promising provinces of science for the future investigator" (*Popular Lectures and Addresses*, Sir W. Thomson (Lord Kelvin), pp. 289-90; 1889. The above is now partly abridged, 1890).

Let the curve AA represent the vibration-series which affects our circulatory and nervous systems and our senses of hearing and sight.[1]

Let B represent the range of temperature within which

[1] This might, of course, be represented in many ways: *e.g.* as straight, or pyramidal, like Sir Norman Lockyer's star-temperature diagram, etc.; but the curve is to me the most suggestive.

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alone we (popularly) suppose life and experience to be possible.

Let C represent the physicist's and physiologist's 'chasm' within which the human organism makes no response to sound or light.

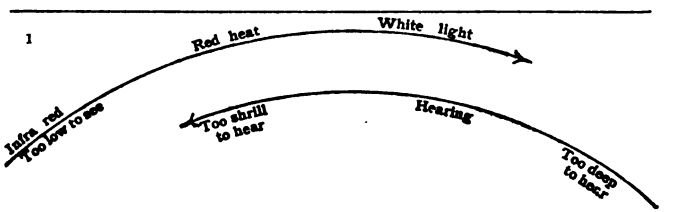
But as 'lower' animals see, hear (as well as smell, taste, feel) further into the experience-matrix than we do, and also have a greater range of life on the temperature-curve (*e.g.* rotifers and ice-fleas and plant-germ, etc.); and further, as animal life in the spore (and larval?) stage can stand much greater heat and cold than in the adult stage, ought we not to take the outside known range of animal life, to add that of the plant, and to draw the lines as overlapping?[1]

This suggests the question—

(1) Is there any chasm at all except that caused by ignorance or lack of observation and attention, by failure to call up reactive power from lower strata in consciousness, or strata below what we call 'consciousness' itself; or by the actual lapse, it may be temporary, of inherent forms of reaction—in short, by lack of life?

The relation between the two vibration-series is twofold. One is the fact of its being a question of vibration—whether in 'air' or 'ether.' The other is the organic meeting-point: both series affect 'organic life and sensation.'

Why then are the two conditions of response exactly opposite? In the one case (taking 'life' as a question of reaction or 'answer' to stimulus) you find life at the two ends of a given line, and not at the centre; in the other you find



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life at the centre, and not at the two ends. On what does this contrast depend, and what is its full bearing and significance? *E.g.*, is it purely a question of level in evolution and stage in adjustment? How does 'degeneration' touch it? Have we vestigial process as well as structure carried on within us and reproducing itself in marked forms at every fresh start of mental development,—that is, in every child and every child-like (young, fresh, plastic, adaptive, assimilative) mind as well as in every case of the child*ish*, that is, of arrested development (either among modern savages or imbeciles, or even idiots)?

Is process and not structure in fact the link between biogeny and psychogeny in this matter? Should the 'kinetic' (for interpretative or translative purposes) here precede the 'static'? . . . Are we to abandon the morphological and adopt the strictly physiological method in such an inquiry as this?

To return to our first question.

Is our 'dying' of cold and of heat merely owing to our inability to live slowly enough for the one or quickly enough for the other? Is there any other reason than this for inability to 'live' in actual ice or flame?

Again, is the *dis*sociating power of heat stronger than any known or conceivable *as*sociating power? And what is the relation to this, if fact it be, of the *spin* power which gives rigidity, elasticity, stability, etc.? Further, is our deafness to deep or shrill notes beyond our narrow compass, and our blindness to the infra-red and ultra-violet rays likewise in the end a question of 'velocity' or 'intensity' in our responsive thrill-power?

Again, how do we definitely limit the action of cohesion by distance? How does the theory of 'action (or non-action) at a distance' come in here? Is there any kind of link known or imaginable to which distance is irrelevant? If so, is gravity this link, and the only one? These questions have already suggested to a science student one line of inquiry; but it must

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be understood that the writer is quite aware of the crudeness of their form, arising from lack of mathematical training.

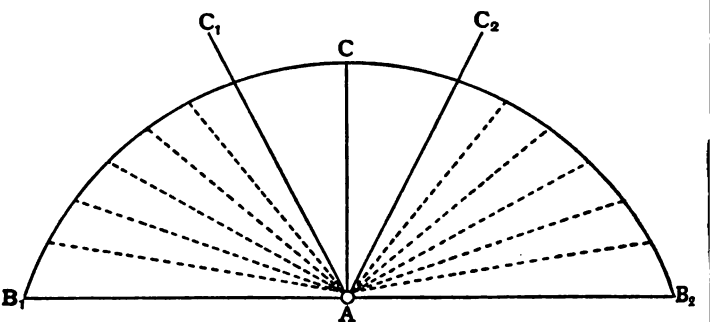
Note XVI., p. 139.

Let A be the speaker or writer.

Let B_1 be the simply Actual or Literal, and its direct expression.

Let B_2 be the simply Figurative or Metaphorical, and its indirect or reflective expression.

Then let C stand for a central point in expression, and let C_1 and C_2 respectively stand for the points where it is



A diagram of meaning.

supposed to become obvious that a given form or mode of expression is to be classed under the literal or the metaphorical. The central region then becomes one which combines the literal and metaphorical, actual and figurative. Where should its limits be placed? And what should it be called?

Any word with accepted variations of meaning may be written (with necessary context) at the various points on the arc, so as to test the question,—Is there or is there not a gradation, in every case, from the literal to the metaphorical, and *vice versâ*, and can this generally be traced?

Note XVII., p. 140.—One of the worst of these cases is

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the use, even by good writers, of the 'current coin' metaphor for words. Notice has elsewhere been taken of this (*e.g. Mind*, No. 38, N.S.). It is, of course, quite defensible as used by the economist (who admittedly deals with language under one aspect only), as a means of exchange. But the following contrasted extracts speak for themselves :—

"Where is all this to end, and what are we to do with a language which is having its choicest and most precious coins passed daily backwards and forwards from hand to hand, until every trace of their clean-cut brightness is being worn off them, and they are becoming as lustreless and as edgeless as so many old shillings" ("The Age of Superlatives," *Literature*, December 4, 1897).

". . . As I look at the picture my thoughts go back involuntarily to the reading-book that we used at school. At the head of one of the earlier chapters was a quotation from some mysterious 'Austin' which wonderfully impressed me. 'The words,' it said, 'are to be delivered from the lips as beautiful coins newly issued from the Mint, deeply and accurately impressed, perfectly finished, neatly struck by the proper organs, distinct, sharp, etc.' Perhaps it was the reference to the new money that appealed to me; but whatever the reason for these words sticking in my memory, they certainly seem appropriate enough to the painting of many popular Academicians" (A. J. Finberg in *National Review*, June 1902, p. 642).

"Words are not coins which have an interchangeable value. A scientific term is capable of international exchange. The idea that it conveys can be passed from land to land, uncoloured by emotion, untouched by association. Each people can express it in exactly equivalent form. A cube root is the same thing to an Englishman as to a Russian. But the language of literature is totally distinct. The words stand rooted in the soil of national life, they are nourished from a people's history. Around them have gathered the accretions

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of thought of successive generations. The associations of poetry and eloquence cling about them. Words whose nearest equivalents are for us dead and prosaic stirred the pulses of a Greek and vibrated with memories of Troy and Salamis. How different, again, is the same word when it meets us in Homer and in the New Testament! To the student of language one such word is in itself the epitome of a vast chapter in the history of thought, or represents, it may be, a revolution in our ideas of morals and religion" (Butcher's *Greek Genius*, pp. 225-26).

Note XVIII., p. 153.—The whole passage is worth quoting as an unbiassed plea for that translation which is but an extension of the process there described. "We know of only *one* source of *immediate revelation* of scientific facts—*our senses*. Restricted to this source alone, thrown wholly upon our own resources, obliged to start always anew, what could the isolated individual accomplish? Of a stock of knowledge so acquired the science of a distant negro hamlet in darkest Africa could hardly give us a sufficiently humiliating conception. For there that veritable miracle of thought-transference has already begun its work, compared with which the miracles of the spiritualists are rank monstrosities—*communication by language*. Reflect, too, that by means of the magical characters which our libraries contain we can raise the spirits of the 'sovereign dead of old,' from Faraday to Galileo and Archimedes, through ages of time—spirits who do not dismiss us with ambiguous and derisive oracles, but tell us the best they know; then shall we feel what a stupendous and indispensable factor in the formation of science *communication* is. Not the dim, half-conscious *surmises* of the acute observer of nature or critic of humanity belong to science, but only that which they possess clearly enough to *communicate* to others.

But how, now, do we go about this communication of a newly acquired experience, of a newly observed fact? As the different calls and battle-cries of gregarious animals are

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unconsciously formed signs for a common observation or action, irrespective of the causes which produce such action—a fact that already involves the germ of the concept; so also the words of human language, which is only more highly specialised, are names or signs for universally known facts, which all can observe or have observed. If the mental representation, accordingly, follows the new fact at once and *passively*, then that new fact must, of itself, be immediately constituted and represented in thought by facts already universally known and commonly observed. Memory is always ready to put forward for *comparison* known facts which resemble the new event, or agree with it in certain features, and so renders possible that elementary internal judgment which the nature and definitively formulated judgment soon follows.

Comparison, as the fundamental condition of communication, is the most powerful vital element of science. The zoologist sees in the bones of the wing-membranes of bats, fingers; he compares the bones of the cranium with the vertebræ, the embryos of different organisms with one another, and the different stages of development of the same organism with one another. The geographer sees in Lake Garda a fjord, in the sea of Aral a lake in process of drying-up. The philologist compares different languages with one another, and the formations of the same language as well. If it is not customary to speak of comparative physics in the same sense that we speak of comparative anatomy, the reason is that in a science of such great experimental activity the attention is turned away too much from the *contemplative* element. But like all other sciences, physics lives and grows by comparison" (Professor Ernst Mach's Lecture at Vienna, quoted in *Open Court*, November 8, 1894).

Note XIX., p. 171.—"So far as the myth is simply a rough statement of observed facts, we may admit that its disappearance is a clear gain. We may admit, too, that ultimately its

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disappearance will not be even a loss to the imagination. When the imaginative synthesis has overtaken the logical, when the bare framework of formulæ has gathered round it the necessary associations, we may be able to express our emotions directly as well as by the intervention of a crude hypothesis. . . . The evil is not that a charm has departed, but that we have lost a mode of expressing our emotions. The old symbols have ceased to be interesting, and we have not gained a new set of symbols. . . . We invert the relation of cause and effect when we consider that our emotions are determined by our imaginative creeds. . . . And thus the loss which Wordsworth might fairly lament was not the loss of a mistaken theory about facts, nor the loss of a consoling prospect for the future, but the loss of a system of symbols which could enable him to express readily and vigorously every mood produced by the vicissitudes of human life. In time the loss may be replaced, the new language may be learnt; we may be content with direct vision, instead of mixing facts with dreams; but the process is slow, and, till it is completed, the new belief will not have the old power over the mind. The symbols which have been associated with the hopes and fears, with the loftiest aspirations and warmest affections of so many generations, may be proved to be only symbols; but they long retain their power over the imagination. Not only respect for the feelings of our neighbours, but our spontaneous impulses, will tempt us to worship at the shrines in whose gods we no longer believe. The idol may be but a log of wood; yet, if it has been for ages the tutelary deity of a race, they will be slow in discovering that it is possible to express their natural sentiment in any form but that of homage to the old god. The importance of some outward and visible symbol of an emotion is evident in all religious and political history—so evident, that many people hold the symbol to be everything, and the symbolised nothing. Some day patriotism may justify itself, but it cannot yet be expressed except in the

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form of devotion to some traditional fetish, or to a particular flag. The flag you say is but a bit of coloured cloth. Why not manufacture one as it is wanted? Unluckily, or luckily, it is as hard to create a new symbol as to obtain currency for a new word" (*English Thought in the Eighteenth Century*, Leslie Stephen, vol. i. pp. 15-16; 1881).

Note XX., p. 198.—As in almost all cases, I had written this long before seeing it expressed by recognised authorities. See, for instance, Professor Ramsay's admirable address on "The Functions of a University" (quoted in *Nature*, August 15, 1901), from which the following is extracted: " . . . the human race is differentiated from the lower animals by the desire which it has to know 'why.' You may have noticed, as I have, that one of the first words uttered by that profound philosopher, a small child, is 'why.' Indeed, it becomes wearisome by its iteration. We are the superiors of the brutes in that we can hand down our knowledge. It may be that some animals also seek for knowledge; but at best it is of use to themselves alone; they cannot transmit it to their posterity, except, possibly, by the way of hereditary faculties. We, on the contrary, can write and read; and this places us, if we like, in the possession of the accumulated wisdom of the ages.

"Now the most important function, I hold, of a University is to attempt to answer that question, 'why?' The ancients tried to do so; but they had not learned that its answer must be preceded by the answer to the question, 'how?' and that in most cases—indeed in all—we must learn to be contented with the answer to 'how?' The better we can tell *how* things are, the more nearly shall we be able to say *why* they are.

"Such a question is applicable to all kinds of subjects; to what our forerunners on this earth did; how they lived; if we go even further back, what preceded them on the earth. The history of these inquiries is the function of geology, palæontology, and palæontological botany; it is continued through

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archæology, Egyptian and Assyrian, Greek and Roman; it evolves into history, and lights are thrown on it by languages and philology; it dovetails with literature and economics. In all these, research is possible; and a University should be equipped for the successful prosecution of inquiries in all such branches.

"Another class of inquiries relates to what we think and how we reason; and here we have philosophy and logic. A different branch of the same inquiry leads us to mathematics, which deals with spatial and numerical concepts of the human mind, geometry and algebra. By an easy transition we have the natural sciences; those less closely connected with ourselves as persons, but intimately related to our surroundings. Zoology and botany, anatomy, physiology, and pathology deal with living organisms as structural machines, and they are based on physics and chemistry, which are themselves dependent on mathematics.

"Such inquiries are worth making for their own sakes. They interest a large part of the human race, and not to feel interested in them is to lack intelligence. The man who is content to live from day to day, glad if each day will but produce him food to eat and a roof to sleep under, is but little removed from an uncivilised being. For the test of civilisation is *prevision;* care to look forward; to provide for to-morrow; the to-morrow of the race, as well as the to-morrow of the individual; and he who looks furthest ahead is best able to cope with nature, and to conquer her."

Note XXI., p. 211.—"The construction of a universal language seems to possess an extraordinary fascination for a certain order of mind. During the last 200 years no less than 150 attempts have been made to bridge over that gulf which lies between any two members of different nations who can only communicate their more elementary wants by gesture. Among the more recent, our readers will remember Volapuk, which was invented by a German Catholic priest in 1879. But

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in Paris alone the 'Langue Blue,' or 'Bolak,' brought out in 1899, was followed in 1900 by 'Spokil.' And now, in 1901, the attention of the Académie des Sciences has been drawn by General Sébert to the striking advantages to the scientific world of *Esperanto*" (*Westminster Gazette*, April 29, 1901).

Note XXII., p. 214.—As Mr. G. F. Watts has admirably put it: "the education of the people—that is the great question. Why do you not concentrate attention upon that? To educate your people, to draw out of them that which is latent in them, to teach them the faculties which they themselves possess, to tell them how to use their senses and to make themselves at home with nature and with their surroundings—who teaches them that? Your elementary schools don't do it. No; nor your public schools. Your Eton and your Harrow are just as much to blame, perhaps even more so. What is the first object which a real education should aim at? To develop observation in the person educated, to teach him to use his eyes and his ears, to be keenly alive to all that surrounds him, to teach him to see, to observe—in short, everything is in that. And then, after you have taught him to observe, the next great duty which lies immediately after observation is reflection—to teach him to reflect, to ponder, to think over things, to find out the cause, the reason, the why and the wherefore; to put this and that together, to understand something of the world in which he lives, and so prepare him for all the circumstances of the life in which he may be found" (*The Review of Reviews*, June 1902).

In this connection I may cite Mr. R. H. Quick's valuable *Essays on Educational Reformers* (1898). Writing before the current of interest in educational questions had reached its present force, his witness still remains pertinent. For instance, "Young teachers are mostly required to fulfil their daily tasks without the smallest preparation for them; so they have to get through as best they can, and have no time to think of any high ideal, or of any way of doing their work except that which gives

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them least trouble. . . . Thus it is that the tradition of the schoolroom settles down for the most part into a deadly routine, and teachers who have long been engaged in carrying it on seem to lose their powers of vision like horses who turn mills in the dark" (p. 182). No wonder their pupils' vision is darkened too.

Again, "All the higher powers can be exercised only when the pupils are interested, or, as Mr. Thring puts it, 'care for what they are about.' The memory that depends on associating sounds is independent of interest and can be secured by simple repetition. Now it is very hard to awaken interest, and still harder to maintain it" (p. 193, footnote). Here we have the secret. Except in certain forms of imbecility or dementia, it is never hard to awaken interest in the young. Failure simply means that the springs of interest are not touched,—or are so touched as to be dried up.

"It is the characteristic of a young student in the mathematical sciences, that he sees, or fancies that he sees, the truth of every result which can be stated in a few words, or arrived at by few and simple operations, while that which is long is always considered by him as abstruse. . . . This arises, in our opinion, from the manner in which his previous studies are usually conducted. From his earliest infancy, he learns no fact from his own observation, he deduces no truth by the exercise of his own reason. Even the tables of arithmetic, which, with a little thought and calculation, he might construct for himself, are presented to him ready made, and it is considered sufficient to commit them to memory. Thus a habit of examination is not formed, and the student comes to the science of algebra fully prepared to believe in the truth of any rule which is set before him, without other authority than the fact of finding it in the book to which he is recommended. It is no wonder, then, that he considers the difficulty of a process as proportional to that of remembering and applying the rule which is given, without taking into consideration the nature of the

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reasoning on which the rule was founded" (*The Study of Mathematics*, A. de Morgan (1831), pp. 182-3).

Note XXIII., p. 214.—Here as usual it is difficult to choose between the examples which abound on every side. Take the following: "A gift of diction enables some men to reiterate with apparent novelty; but this gift is as rare in the House as the capacity to articulate so that totally different syllables shall not be mistaken for one another. There is nothing the Englishman despises so much as readiness of speech. It is associated in his mind with shallowness and insincerity. He likes to pose in the character of the man of few words; but he will rarely take the trouble to learn how to speak them with force and clearness. He will work like a slave at Blue Books, getting up a case with enormous pains; but he will give no fraction of this trouble to such a preparation of his speech as will compress his matter, and prevent it from wandering at a loose end through interminable sentences. . . . Any nimbleness of mind which" (the young member) "may naturally possess is crushed by his Parliamentary manner, which compels him to plough through solemn verbiage round a commonplace idea long after the company have passed to something else. This melancholy habit is hardened by platform oratory, the art of which is to say as little as possible in the greatest number of words" ("The Loquacity of Parliament," *Speaker*, May 15, 1897). But the mischief has been started in his early boyhood.

Note XXIV. p. 216.—To quote Julian Corbett (in the *Monthly Review* for March 1902) on "Education in the Navy": "Signalling appears to be the only subject of which the average boy knows anything when he leaves. It is highly significant that this subject happens also to be one that can only be taught practically. It is the only one that cannot be poisoned with the old taint of the schoolmaster, and thus the natural instinct for a boy to acquire new capabilities is left as free to grow as it is in his games. But over all the rest is

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the nauseous trail of the pedagogue—even it might be said of the scrappy curriculum of a young ladies' finishing academy fifty years ago. Every subject in turn is presented to a boy in the old repellent way, and he is given enough of it to dull the edge of his appetite for a new food without imparting to him an appreciable amount of nourishment. Boys, we repeat, are naturally keen to learn new things, and remain keen till the fare is made stale. It is even doubtful whether the greediest child would really enjoy a cake if he were kept a year or two learning recipes before he was allowed to taste one. It is neither instruction nor education that he gets in the *Britannia*, but rather a mere deadening of the appetite for what concerns his profession and a voracious interest in various things that do not." The present system of teaching grammar as the introduction to a language dead or living, may well be compared to learning recipes before you are allowed to eat!

Professor Perry's admirable and much-needed crusade (see Report of British Association Meeting, letters in *Nature*, and elsewhere) is directly concerned only with mathematical teaching; Dr. Lodge's takes somewhat wider ground.

The following extracts are from articles in the *Times* which tend to show that there is some real hope of a reforming movement which shall cover the whole ground of education:—

"Education in the truest sense of the word, the education of the judgment on which Faraday was wont to dwell as the greatest of modern necessities, the education of the senses to perceive the tones and harmonies of nature, and, perhaps, above all, that kind of education in language which confers the power of saying exactly what is meant, and of knowing exactly the meaning of what is said, are the essential bases of the only kind of culture which can confer happiness upon those who are so fortunate as to obtain it, and which can confer, it may be, not only happiness, but also time in which the happiness may be enjoyed. . . . The open eye, the thinking mind, the ever-receptive faculties, the ever-busy

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brain, these are the things which, if not overdone, at once produce and adorn old age. It is not given to every one to possess or to exercise them in full measure; but every one may exercise them in some measure, and may do something towards their cultivation" (*Times*, August 4, 1896).

". . . Underlying Dr. Lodge's remarks are truths relating to education at least as important as many of the theories which have in the contest ending yesterday been advocated in the speeches of candidates for election to the School Board Read some of the addresses of even the most intelligent of them, and compare them with the catholic remarks of Dr. Lodge, and it will strike one how, in the heated atmosphere of controversy over primary education the great objects are apt to be obscured, if not lost sight of. . . .

" 'Real education was not an affair of the memory only; the mind was a live thing, which not only received and incorporated, but by brooding and experience enlarged and increased the store of facts, and recognised or forged links which connected them with each other.' Here we have got far away from the region of the schools and education departments. Here we are in view of the fact that the true educative hours have been some seasons in which the mind lying fallow has been the receptive soil for seed carried to it by accident; the conversation, it may be, of some helpful friend, some novel experience in life as illuminating and enlarging as a journey to a far country, the sudden perception of a new truth clothed in old words—to the scholar, for example, the discernment of a new meaning in, say, some line of Horace come down to him from school days; to the philosopher a sudden insight into some ancient adage of, say, Heraclitus, no longer 'the obscure' in that lucid hour; to the man of science a flash which forms a connection between two mental currents hitherto apart; to the man of affairs a clear road presented in what had seemed a pathless jungle of details. Mischievous must be the education, and maimed its recipient, if it does not permit and even

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encourage those seasons of rest which are the seasons of growth. . . . Perhaps the curriculum in schools and elsewhere will be greatly modified. Professor Perry thinks that in schools should be given some elementary instruction in the calculus. Some persons are of opinion that at early age the pen should be less used by youth than the rifle. We have among us many who would model the course of instruction on that given in the workshops of the best medieval craftsmen. A series of experiments, true leaps in the dark, is before us; and, however fantastic many of them, they must be tried, even if only in order to be rejected, to the satisfaction of those who now recommend them. What is missed in the majority of the recommendations and in the copious literature of the last six weeks on education is a clear perception of the truth that in most concerns of life character counts for everything. 'Science is organised common sense' according to a formula now much in vogue. Unfortunately, the common sense to be organised is rare; the capacity to see facts as they are, to mark the consequences of certain action, to be under no delusion that next time in like circumstances Nature will act differently, and to order one's life on that assumption, is almost as unique as genius itself" (*Times*, November 30, 1900).

"'I am convinced,'" said Edmund Burke, "'that the method of teaching which approaches most nearly to the methods of investigation is incomparably the best, since, not content with serving up a few barren and lifeless truths, it leads to the stock on which they grew; it tends to set the learner himself on the track of invention, and to direct him into those paths in which the author has made his own discoveries.' . . .

"Our public and private schoolmasters are just returning from their summer holiday to the practical work of education. It is for them to give effect to whatever is sound in the conclusions of those who approach it from the theoretical or scientific side. But what proportion of them have received any previous training in the principles or methods of teaching?

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Solvitur ambulando is the accepted principle in regard to pedagogic practice. The young graduate goes straight from his University examinations, or from the cricket or football field, to the exercise of a profession for which some knowledge of sound principles and right methods ought surely to be essential; but very little attempt is as yet made to initiate him into such principles and methods before he comes to the delicate and responsible task of dealing with young minds. At first, and for some time, he is an experimenter, and too often a blundering experimenter, upon the boys committed to his charge. His method is 'heuristic' enough, so far as concerns himself; for he has to find out for himself what no one has tried to tell him. He has no chance of coming to his work as well equipped as the elementary school teacher, after the course at a training college, comes to his. A young doctor is, very properly, not allowed to experiment upon the bodies of his fellow-creatures till he has received a thorough professional training; but the young schoolmaster may experiment upon their minds without any previous training at all. The Universities, to do them justice, and the headmasters of the leading public schools are trying to remedy this; but they are not yet enough supported by the public opinion of the teaching profession itself, not to mention the general public. The establishment of more scientific views upon education, for which we look to the British Association, may do something to promote right methods of training teachers, no less than of teaching itself. Whatever be the result of its discussions, it is something to have a platform upon which educational matters can be discussed from an educational, and not from a political or personal standpoint" (*Times*, September 25, 1901).

Professor Postgate's timely article in the *Fortnightly Review* for Nov. 1902 supplies needed witness from a somewhat different point of view. He considers that Greek and Latin "may continue to confer in the future, as they have done in the past, priceless benefits upon all higher human

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education." But he insists that "those who believe that a due recognition of the claims of Greek and Latin is vital to our intellectual welfare" must "know what they want." His own solution does not here concern us. But he quotes with approval the words, "'A classic text to me both was, and is, a thing of verbs and adjectives, of the grammar and the lexicon; and the study of it had no more to do with poetry than it had with chemistry'"; and speaks of his painful sense of the "mental apathy and inattention with which men read the Classics by themselves." Can we wonder, when to most of them a classical text is merely a question of grammatical mechanism and of verbal memory? Then he tells us that "for the elementary Latin grammar most widely used in this country," he has "never heard a good word spoken. A practical schoolmaster declares of it that 'practically the whole Latin education of the country is based upon a work, for which 'unsatisfactory' is a euphemism." The pronunciation of Latin, also, "has never been in a worse condition than at the present time," yet the advantages of the reformed pronunciation, "literary, philological, and practical, need no demonstration now." But "the cardinal point of all" is this: "A number of years ago, the living languages and literatures were studied as if they were dead. We have changed all that, and now, *if the 'dead' languages and literatures are not to retire into the background, they must be taught as if they were alive*" (sic). And this applies in education everywhere, at all times, and to all.

Note XXV., p. 228.—The following extracts are from a series of twelve familiar lessons on 'Sign and Sense' given by a grandmother to a boy eight years old, and reported verbatim. They gave much delight, not because of any aptitude on the part of the teacher, but obviously from the natural affinity of the subject and the fascination of its problems to the young mind.

The lessons, however, had to be discontinued from the time

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the boy went to school. It is to be hoped that the time is not far off when such lessons in worthier form will become the recognised introduction to the school course.

Lesson I.—(Drawing big A on the black-board).—*G.* What's that? *D.* First letter of the alphabet. (Drawing big B on the black-board).

G. What's that? *D.* Second letter of the alphabet. *G.* What's the alphabet? *D.* All the marks we use when we write. *G.* Now, D, what does 'alphabet' mean? and when I ask that, *what* do I mean? because you have just told me one meaning, but does the *word* mean anything? *D.* I forget. *G.* Then, what's Alpha? *D.* Oh! (with smile) the first letter of the Greek. *G.* And what's Beta? *D.* The second.

G. Now you see alphabet means two things, and the second is what the *word* means. Some day we will talk about the other thing which isn't a word, and yet means something. But that must be kept for a treat. Well now, D., supposing you wanted to talk to me, to tell me something about Toss and of the animals like him, and suppose you knocked at the door and ran into the room, what would you do? *D.* I should begin telling you, Grannie. *G.* Well, and how do you tell? Isn't it by making funny noises in your throat? *D.* Yes. G. And what particular funny noise would you try to make if you wanted to tell me about little or big four-legged things which said Bow-wow? *D.* DOG. *G.* Now D., look here, suppose I was somewhere else, in Scotland perhaps, or suppose you wanted to tell your mother all about it, and she was out of hearing, what's the good of making funny noises then; wouldn't you try something else? *D.* Yes, I should. *G.* What would you do? *D.* I would write a letter. *G.* What is writing a letter, D.? *D.* Why, putting black marks on white paper. *G.* And so I suppose (writing 'dog' on the black-board) you would write this to make mother or me think the same thing as if you made a funny noise? *D.* Yes, I should.

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G. Now, D., how do you think people began to choose all the great lot of different funny noises I am making now, and how do you think other people began to see what all the funny noises *meant*, and how do you think they began the black marks? Do you think they said to each other, When I do this (making various sounds, letters, syllables, words), when I do *this* you are to remember to think about dog or cat? and do you think they said to each other, When I make dots or scratches (making them on the black-board) or crooked marks, and put them together, you are to think of dog or cat just the same? D., just think a minute, *how could they get all these other funny noises to explain the first ones by?* *D.* Well, I am sure I don't know, Grannie. *G.* Well, D., I am not sure if any of us do, quite, but we are all trying to learn all about it, and I will tell you a little of what we do know.

You know about the wonderful people who lived on the banks of the Nile thousands of years ago and built pyramids, and so on. *D.* Oh, yes, Grannie, these were the people in Egypt. *G.* Well, this book is all about them, and this red book is all about their alphabet, and yet do you know it was not an alphabet like ours, for what we call the letters were all little pictures of men, and all sorts of animals and things, like an eye, a mouth, or a hand, a door, a chair-back, a nest with birds in it, and so on. But you know, D., they made funny noises as well as pictures in those days, and how they began to choose this one and that one and the other one, and all to agree about them, is just what many people are trying to find out. But now I want to ask you one thing. Look at the big A we began by drawing. What's the use of it? *D.* To tell us something. *G.* And how does it do it? Does it sit for it, or walk for it, or swim for it, or fly for it, or—— *D.* Stand for it, that's it, Grannie!—— *G.* Now, D., do you know what a thing is called, no matter what it is, if it stands for something else? *D.* No, I don't. *G.* It is called a *sign.* Now if you call a thing a sign, and it stands for something

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else, what are you quite sure it has got? I will tell you. It has got something very wonderful, which just makes all the difference no matter what we want to do, to talk or to think about; and that something is what we generally call the *meaning;* only there are other words for that, and what the sign has which is so precious and so useful is not always quite the same thing, but that I can't tell you about now. And are there no other 'signs' except funny noises or marks? nothing that makes you think, why that's——something? Suppose I am a stranger, and am ill, and can't talk, and I can't use my hand, and I come to your house and suddenly begin to pretend to yawn and nod, and shut my eyes, and lean back, and drop my book out of my hands, what would you think that a sign of? *D.* Why, you're sleepy. *G.* Yes. And if I pretend to lie down, and then look at you in an asking way as Toss does when he wants something? *D.* Why, you want me to take you to a sofa or bed. *G.* So you see that again is a sign.

Would you like to know more about the little pictures, and how we got our letter T from an owl's head? And what it is that makes it worth learning the alphabet, and spelling, and grammar, and making dictionaries with thousands of words, and arranging them in a million ways? *D.* Yes, that I should.

Lesson II.—Went over first lesson; this took about twenty minutes. D. remembered most of it, but forgot the word 'sign' until reminded, when the cue set him off, showing he only wanted that to remind him of it all. (His attention was afterwards called to this, and he was surprised to remember what the sound 'sign' had been able to do for him.)

G. A sign has both meaning and sense; and so a word, which is a particular kind of sign, has both meaning and sense. Now, D., could anything have meaning and no sense? (He was puzzled at first, first said Yes, and then No). *G.* Suppose I wanted to make flowers grow, and then I planted them among the coals in the grate and lighted the fire to light

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them and warm them like a sun, and then took a jug of water and poured it over them to make them grow, so that it put the fire out, would there be any *sense* in that? *D.* No, not one bit. *G.* But would there be any meaning in it? Yes, because I *meant* to make the flowers grow, only I took a very silly way of doing it. *D.* Yes, I see.

G. In our next lesson we will see what 'meaning' *means;* for that is the secret of learning anything. One great reason for doing these lessons is to save you trouble when you are a man. What do I mean by that? Now, let's think of two ways of saving trouble. (1) Letting things slide (here let pencil slide to the ground). (2) Numbers from the Egyptian alphabet. At first they made a lot of little pictures to express 100, etc., then they made fewer, till at last one simple figure was enough for 10,000,000. So, our own alphabet saves lots of trouble, and yet lets nothing slide and loses nothing. Yet don't you think it is very stupid of us to go on writing all these tiresome round O's, when even the Egyptians thousands of years ago knew better? It is a waste of paper, of ink, of time, and of trouble. And we could easily invent a better way than even theirs. The alphabet, then, has the sense which is reasonable. When we speak of a sensible man we mean a reasonable man, don't we, though that's not all we mean? *D.* Yes, and what is reason, Grannie? *G.* Well, look in your Latin dictionary and see what 'ratio' means. Next time when we see what meaning means we will see also what sense and reason mean, and you will see *why* many things are like this and not like that. For you want to know *reasons*, don't you, D., and often ask Why?

Lesson III.—G. (Acted getting out of train.) What does that mean? (D. understood at once.)

G. (Acted 'first sight of the sea.') What does that mean? *D.* You can see the sea now.

G. (Acted getting on board the steamer.) What does that mean? *D.* That's getting on the steamer.

G. All these things we have just been doing, getting

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out of the train, seeing the sea, getting on the steamer, all *mean* going on a journey. Now, what do we think before starting; don't we *mean* to go? *D.* Yes, we do. *G.* Well, D., there is another way of saying I *mean* to go, and that is I *intend* to go; so you see that I *intend* to go is the same as I *mean* to go. Now, you and I saw the other day that *a sign always stands for something*, and that to 'mean' is to stand for something. *D.* Yes, I remember. *G.* Then if I mean to go, am I a *sign*, and do I *stand for* going on a journey? *D.* No. *G.* You see, 'to mean' has two meanings, and we must always remember that. Many people forget it. . . . *G.* So you see that 'to go' is what I *intend*, and if I like to be very solemn I might say, "It is my intention to go upstairs" (this pompously and in a gruff voice). So you see 'going on a journey' is what I *intended* to do just as the sense is what the word is intended to—give. And you see that meaning sometimes 'means' intend and sometimes also 'means'?—— *D.* SENSE.

Lesson V.[1]—*G.* Another question I want you to give me a lesson about. What would the world be like if there was no meaning in it? *D.* Oh, I'll tell you, Grannie, it would be dull and stupid, and no good at all. *G.* And what are things which have no sense in them? *D.* Why, they are just silly and stupid. *G.* So you wouldn't like to live in such a world, would you? And the more meaning and sense there is in it the better worth living in? *D.* Yes, Grannie, there is nothing in the world like Meaning. *G.* Then don't you think, D., we ought to be very careful how we use that wonderful thing Meaning, and that still more wonderful thing Sense? Wise people don't waste and throw away their precious things, do they? *D.* No, they don't. They put them in their pockets or they lock them up. *G.* Yes, or better still, they make the best use of them. . . .

[1] Lesson IV. omitted.

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G. Now look at this enormous book (showing him the first volume of Murray). Now, look at this tiny little book (showing him the Unicode). In the big book there is an immense lot of words, and there are always more and more to add to it—many of no particular use. We go on heaping up word after word anyhow, and after all, with all the thousands of words you see in this book, many things which we all of us want to say we can't say.

This tiny book is what we used when your father and mother were in India. They had one copy and we had one copy, and so when we looked in this book we knew how to say, for instance, Do-not-come-until-you-get-my-letter, in one word 'Ascribo.' And, Some-letters-and-telegrams-lying-here-for-you-what-shall-be-done-with-them in one word 'Immugio.' So you see that for some purposes we might put a great deal more into our letters, and they would take up much less room and much less time, and yet they would have as much meaning as if they were quite long, and that is the same improvement, isn't it, as it is to be able to say what you want with only twenty-six letters in the alphabet, instead of having to use thousands of different marks as in the Chinese, or having to make a picture of every single thing you want to say? You see we want to have less waste, and also we want to be able to say more things and say them better.

Lesson VI.—G. You see that when anything happens to you, and you feel it or see it, etc., it is like a translation, you are really *in a sense* translating all day long. But do you think that men and women and boys and girls do this, but that animals don't do it in any way? *D.* I think they do, Grannie. *G.* Yes, *in a sense* they do. Never forget how useful it is to remember the words 'in a sense.' We will talk more about that presently.

Now about translating. Suppose there are crowds and crowds of small green points growing out of the ground, and suppose there was a cow staring at these green points, not

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going close to them or touching them, but still looking at them, what would happen after a time? First she would feel weak and tired, and would lie down, then she would feel worse still, and put her head down; and then at last she would roll over and die; all because she had not 'translated' the green points she saw out of her eyes. The little points of grass go crowding on, and growing and growing as if they said they would like to be cropped, because it would make them grow quicker; but suppose the cow instead of staring at the green points, and never translating them as we do when we use words like grass, food, good to eat, and so on, did translate them in her own way, what would she do?

D. She would put her leg forward, Grannie, and her nose out. *G.* Yes, and open her mouth and begin to crop and so on. So you see even if you are only a cow, you need to see what some things mean, and act upon your seeing or your smelling, or you would starve and die. . . .

(Here a number of objects were taken, distinctions in character pointed out, named, etc.)

G. If we were to tell Baby about all these distinctions would they mean much to her? *D.* No. *G.* But as she grows older they will. The more differences you see and the more distinctions you can make the more of a man you are. You can already make a distinction between all these letters and all these words, and every year you will learn to make more. So when you hear people wasting distinctions and saying, Oh, this will do as well as that, and calling different things by the same name, and saying that words don't matter, I'll tell you something to say to them: 'Very well, if this word will do as well as that, then the spout of the boiling kettle will do as well as the handle to hold it by!'

(D. went into a fit of laughing and said, 'That I will.')

Note XXVI., p. 235.—Parts of Major MacMahon's Opening Address (Section A, Mathematics and Physics, Brit. Assoc. 1901) might almost be used to describe the position

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claimed for Significs: "A subject of study may acquire the reputation of being narrow either because it has for some reason or other not attracted workers and is in reality virgin soil, only awaiting the arrival of a husbandman with the necessary skill, or because it is an extremely difficult subject which has resisted previous attempts to elucidate it. . . . When the subject is narrow merely because it has been overlooked, the specialist has a grand opportunity for widening it and freeing it from the reproach of being narrow; when it is narrow from its inherent difficulty, he has the opportunity of exerting his full strength to pierce the barriers which close the way to discoveries. . . . I will instance the Theory of Numbers, which, in comparatively recent times, was a subject of small extent and of restricted application to other branches of science. The problems that presented themselves naturally, or were brought into prominence by the imaginations of great intellects, were fraught with difficulty. There seemed to be an absence, partial or complete, of the law and order that investigators had been accustomed to find in the wide realm of continuous quantity. The country to be explored was found to be full of pitfalls for the unwary. . . . The province of the Theory of Numbers was forbidding. Many a man returned empty-handed and baffled from the pursuit, or else was drawn into the vortex of a kind of maelström and had his heart crushed out of him. But early in the last century the dawn of a brighter day was breaking. . . . The point I wish to urge is that these specialists in the Theory of Numbers were successful for the reason that they were not specialists at all in any narrow meaning of the word. Success was only possible because of the wide learning of the investigator; because of his accurate knowledge of the instruments that had been made effective in particular cases. I am confident that many a worker who has been the mark of sneer and of sarcasm from the supposed extremely special character of his researches would be found to have devoted the larger portion of his time to the study of methods which had been available in other

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branches, perhaps remote from the one which was particularly attracting his attention. He would be found to have realised that analogy is often the finger-post that points the way to useful advance; that his mind had been trained and his work assisted by studying exhaustively the successes and failures of his fellow-workers. . . . The theory of invariants . . . involves a principle which is of wide significance in all the subject-matters of inorganic science, of organic science, and of mental, moral, and political philosophy. In any subject of inquiry there are certain entities, the mutual relations of which under various conditions it is desirable to ascertain. A certain combination of these entities may be found to have an unalterable value when the entities are submitted to certain processes or are made the subjects of certain operations. The theory of invariants in its widest scientific meaning determines these combinations, elucidates their properties, and expresses results when possible in terms of them. Many of the general principles of political science and economics can be expressed by means of invariantive relations connecting the factors which enter as entities into the special problems. . . . It is the *principle* which is so valuable. It is the *idea* of invariance 'that pervades to-day all branches of mathematics. It is found that in investigations the invariantive fractions are those which persist in presenting themselves, even when the processes involved are not such as to ensure the invariance of those functions. Guided by analogy, may we not anticipate similar phenomena in other fields of work?" Major MacMahon continues: "The chief problem" (of the combinatorial analysis) "is the formation of connecting roads between the sciences of discontinuous and continuous quantity." And he further declares that he does not "believe in any branch of science or subject of scientific work being destitute of connection with other branches. If it appears to be so, it is especially marked out for investigation by the very unity of science. There is no necessarily pathless desert separating different

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regions." This advocates throughout what I would call the true because the significant type of specialism. And the conclusion of this suggestive address would from the point of view of Significs apply to every form of knowledge and work accessible to man: "What we require is not the disparagement of the specialist but the stamping out of narrow-mindedness and of ignorance of the nature of the scientific spirit and of the life-work of those who devote their lives to scientific research. The specialist who wishes to accomplish work of the highest excellence must be learned in the resources of science and have constantly in mind its grandeur and its unity" (*Nature*, Sept. 12, 1901).

Note XXVII., p. 240.—In this little parable, one form of the evolutionary witness is emphasised because it seems to be entirely ignored. But to press it in isolation must of course lead to absurdity. If we have in many forms of the young organism the scout and even the explorer and the discoverer—and in spore form, the coloniser—on the other hand we have the uniquely slow development of the highest of young organisms, the 'human.' So that if we overwork the 'ancestral' lesson we shall be insisting on the new-born baby running about to seek its food or else surrounding the food like an amœba! And then we shall not know how to fit in the development from egg through larva to fly—it may be to a gorgeous Butterfly! Of course also the higher we rise the more the Parent has to teach the Offspring. All here pleaded is that we should carry on, and thus become able to evoke, the fresh responsiveness of the young, by dealing with them on their own ground.

A careful study from this point of view of *Children's Sayings* (by W. Canton, 1900) throws a really distressing light on our present methods of dealing with the candid and logical as well as with the penetrative and prophetic mind of the typical child. The absurdities and blunders are of course partly the result of the child's elementary and narrowly limited

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experience of the world around it. But too many of them are demonstrably caused by the confusions both of language and thought, as well as the sophistry and conventional equivocations, of its elders. We have not yet learnt to 'set the little child in the midst,' and have ourselves been subjected to this perverting process even by those who loved us tenderly and had no suspicion of the cruel harm they themselves had suffered, and were in their turn doing. The very idea of the 'enfant terrible' and the endless jokes in *Punch*, etc., witness to this. And yet how easy to explain to the child the difference between the unselfish conventions of courtesy and the pretences of the social hypocrite and schemer! As the cases cited are all more or less illustrative, it is impossible to choose between them, and collections like this really call for separate treatment. Meanwhile, in the book above named there are comments which show the author's sense of some at least of our failures.

"Ten-tenths of a child's waking life is spent in observation. Those sharp, frank, innocent eyes are constantly on the watch. He may be talking, he may be playing, he may be day-dreaming, but he is observing and speculating all the time . . ." (p. 58). "It is often at a very early age that we find the little people tackling the mysteries of time and space, the enigmas of birth and death, the marvels of heaven, and a crowd of other questions to which we ourselves shall find no answer on this side of the grassy gate and the dusty way. In all these matters the children's views take the colour of the parents' teaching" (p. 80). That as we are is the sad thing.

"Children are often more logical than grown-ups. The little son of bible-loving parents had a great dislike and fear of being alone in the dark. They tried to reason him out of it both on common-sense and religious grounds. The child listened with puckering brow.

"When they had finished he asked: 'Do you wish me to do evil, then?'

"'Why do you ask that?' questioned his father.

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"'It says in the bible people "loved darkness because their deeds were evil,"' argued the puzzled boy" (p. 117). When will the parent learn here from the child that the horror of darkness is an instinct which has made for survival in days where pitfalls yawned and enemies lurked in darkness, and which is even now an important safeguard in early youth?

Since writing the above I have been glad to find Dr. James Ward speaking (in an Inaugural Address at the University College of Wales) as follows; discussing Imitation (as repetition and association) he says: "Through it men are tamed and taught at first, but it is liable to enslave and blindfold them afterwards: it promotes social stability and discipline at the outset, in the end it is apt to beget social stagnation and bigotry. . . . The child, open-minded, inquisitive, and original, becomes a man hide-bound with prejudice, a mere 'bundle of habits,' when only his propensity to imitation is encouraged and all his latent individuality crushed. Under such conditions most men are born and live: evidences of this most depressing truth lie about us on every hand. . . . The ordinary man and woman dread to be singular, dread to be just what they ought and were meant to be. . . . The customary assuredly can take care of itself: the one thing needful is to foster and promote the new. To neglect or retard that is the surest way to corrupt the world, transforming evolution into revolution, or worse, replacing development by degeneration and decay. . . . The mistake we have made in the past is that we have set knowledge in the first place; not educating in the strict sense, but imparting useful information. The mistake is a very natural one; most men are prone enough to admit their lack of knowledge; they are by no means so ready to admit their lack of wit. . . . So it comes about that though what young minds especially want is training, what they get is learning . . . the one point I would urge is to invert the Baconian axiom: say not that knowledge gives power, but rather that power gives know-

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ledge. Have a care that your minds grow and be not anxious about their possessions." I have to confess that I am no more an individualist than a collectivist. I would in most cases substitute 'initiation' for 'individuality.' I even look forward to an epoch of 'group personality': when two or three shall be grouped together for the highest work, each supplying the lack of the others and thus overcoming the one-sided and constrictive tendency of the single individual, and producing a fresh form of genius. We already have an attempt in this direction in the more intimate examples of literary collaboration. But of course this is not an idea which can be casually thrown out: it goes very deep into the conception of personality itself.

Note XXVIII., p. 241.—Edward Bowen of Harrow may be cited as a notable instance of this. A master of one of the schools most rigidly attached to the traditional methods, he could yet trenchantly denounce teaching by means of grammar as an erroneous path leading to an almost worthless goal, while wearying the feet of the youthful learner beyond bearing. "Boys, he said in effect, were prepared to submit to a good deal of drudgery. They were not, as a rule, wholly idle, or chiefly sullen; but the learning of Latin and Greek through grammars, written in a dead language and consisting of 'a set of clumsy rules, of which a boy will never use the half, and never understand the quarter,' simply meant that a lad's time, docility, temper, desire to improve, confidence in his teachers, were all sacrificed. It was of course the case that a certain amount of grammar was necessary"; but he protested against a "preposterous system which forced upon a boy what was really so much work at a treadmill. Grammar as it was taught was simply too hard. It tortured a lad without even giving him the satisfaction of feeling at the termination of his painful drudgery that he had gained some mite of real knowledge." Further on he says: "If only it could be regarded as an established truth that the office of a teacher is, more than any-

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thing else, to educate his pupils, to cause their minds to grow and work, rather than simply to induce them to receive; to look to labour rather than to weigh specific results; to make sure at the end of a school-half that each one of those entrusted to him has had something to interest him, quicken him, cause him to believe in knowledge, rather than simply to repeat certain pages of a book without a mistake—then we might begin to fancy the golden time was near at hand, when boys will come up to their lessons, as they surely ought, with as little hesitation and repugnance as that with which a man sits down to his work" (*Memoirs*, W. E. Bowen, 1902, pp. 99-101). The foregoing paragraph, though not seen till this book was virtually finished, might almost have served as a summary of some of its chapters.

Note XXIX., p. 248.—At the last moment I am glad to be able to add the witness of Professor Karl Pearson (to whose *Grammar of Science* these Studies owe much) that "to-morrow will be marked by the dominance of intelligence," but that "all intelligence must not be driven through the same mill." Pointing out that playing and questioning are the natural functions of childhood, he pleads for the development of nascent intelligence on these lines. "Facts are to be secondary, methods of the first importance; the intelligent man knows where and how to find his facts, but he retains no more in his head than he finds economical for everyday practice. His brain is an instrument for work, not a lumber-room. Hence, when once the barest essentials of elementary knowledge —the power to read, to write, and to do simple calculations— have been attained, let us adopt largely heuristic methods . . . as a means of training intelligence, and not as a store of facts worth remembering for their own sakes. Let the child come out of the primary school able to formulate its questions intelligibly; able to put eye, hand, and leg into co-operative action; able to read, write, and count; and the first stage in the training of its intelligence to national ends has been attained."

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And in a footnote he adds: "'Facts' change from generation to generation; but skill in manipulating facts is the fundamental sign of a trained intelligence, of a true education, which survives all modifications of its material." And this development of intelligence, be it noted, "is not for selfish ends." Man is "lord of all life" because he can carry its social developments to their highest point. "Education is in no case to leave the feeling that it is finer to follow one trade than another, but is to develop the consciousness that it is a disgrace to follow any craft without intelligent appreciation of the why of its processes. The victory is to the intelligent nation; that nation is intelligent in which each member performs his allotted task with appreciation of how and why it is done." And this can be attained as well in the garden, the stable, the field, as in the laboratory. To acquire or rather to cultivate the true spirit of inquiry "we cannot too often repeat that . . . what we need is a training in method, and not, in the first place, a mere knowledge of facts, nor even of the laws under which these facts may be classified. . . . Treat the known as unknown, to be re-discovered, or bring the student rapidly to the real unknown on the confines of the discovered, then true training in method becomes a possibility" (Prefatory Essay, *Encyc. Brit.*, vol. xxxii., 10th edit.).

THE END

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